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November 7, 2002

VIA ELECTRONIC FILING

Ms. Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, N.W.
Washington, D.C. 20554

Re: *Ex Parte* Presentation in CC Docket No. 01-338; CC Docket No. 96-98; and CC Docket No. 98-147

Dear Ms. Dortch:

On behalf of the Competitive Telecommunications Association ("CompTel"), I write to respond to recent *ex parte* submissions by the Regional Bell Operating Companies ("RBOCs")[1] in the aforementioned dockets, which argue that current state and federal regulations are impairing their ability to invest in upgrades to their networks that will deliver broadband to consumers. More specifically, the RBOCs continue to argue that any requirements to provide facilities as unbundled network elements ("UNEs") priced at TELRIC-based rates eliminate any and all incentive to upgrade their network infrastructure. These arguments, which attempt to extort relaxed regulation in return for the promise of broadband deployment, are misleading and unsubstantiated.

In reality, the RBOCs have a long track record of breaking promises to deploy broadband infrastructure in return for regulatory concessions. Two of the most egregious examples are described in this letter and the attached orders from the Indiana Utility Regulatory Commission and the Pennsylvania Public Utility Commission. Indeed, it is important to realize that the RBOCs reneged on promises to deploy broadband facilities long before the Federal Communications Commission ("FCC") implemented rules that enabled competitors to use the incumbents' existing infrastructure to provide broadband capability, notably digital subscriber line ("DSL") services. In other words, state and federal unbundling obligations have had no negative impact on the RBOCs' investment decisions to date, nor will they in the future. Instead, competition in the broadband market, which only can be preserved through the retention of the FCC's current unbundling rules, has been the real catalyst for the RBOCs' deployment of broadband.[2]

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1 *See SBC Telecommunications, Inc., Memorandum of Ex Parte Presentation*, CC Docket Nos. 01-337, 01-338, 02-33 and 02-52 (filed Oct. 28, 2002) at p. 11; *See Verizon Ex Parte Notification*, CC Docket No. 01-338 (filed Oct. 16, 2002) at p. 1.

2 Indeed, as CompTel documents in the attached analysis of capital expenditures by all participants in the telecommunications services market, the ILECs, since 1996, have invested an incremental $50 billion over

Broken Promises

During the 1990s, the RBOCs approached several state commissions and state legislatures with promises to deploy broadband infrastructure in return for regulatory relief, often through the transition from rate of return regulation to price cap regulation. CompTel presents the experiences of two states to demonstrate that even when an RBOC claims that it will upgrade its network infrastructure in return for relaxed regulation, the RBOCs do not always hold up their end of the bargain.

In 1995, the Indiana Utility Regulatory Commission ("Indiana commission") agreed to relinquish certain aspects of its jurisdiction over Ameritech Indiana (now SBC) based on the Opportunity Indiana alternative regulation plan, which among other provisions placed a cap on the rates for basic local service in return for SBC's promise to spend more than $120 million on infrastructure improvements for schools, hospitals and major government centers.[3] This infrastructure investment, which was scheduled to take place over a six-year period, was to be over and above the normal infrastructure investment that SBC planned for the State of Indiana.

Unfortunately for Indiana consumers, SBC broke its promise to invest in network infrastructure that would benefit schools, hospitals and major government centers. According to an April 1999 Order of the Indiana commission, SBC at best invested $17.8 million, or $62 million less than the $80 million it should have invested as of that date.[4] Even more troubling was the fact that the $17.8 million figure overstated the amount that SBC actually invested to serve these customers. After reviewing SBC's April 1998 Infrastructure Report, the Commission concluded that SBC counted infrastructure provided to customers that were not schools, hospitals or major government centers toward its infrastructure commitment under the Opportunity Indiana plan. As stated by the Indiana commission,

> … apparently Ameritech Indiana considers its customers at an amusement park, a racetrack, discount and grocery stores, a hotel and an automotive plant all somehow qualify to receive benefits promised to schools, hospitals and government centers. These represent only some of the more readily identifiable accounts listed by Ameritech Indiana as qualifying toward Opportunity Indiana expenditures. Unfortunately, there are many more accounts that provide no clue to the customers' characteristics. [5]

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and above the most generous estimates of what their capital expenditures would have been absent the Telecommunications Act of 1996. *Measuring the Economic Impact of the Telecommunications Act of 1996: Telecommunications Expenditures (1996-2001)*, (October 2001) p. 16-17.

[3] *In the Matter of the Petition of Indiana Bell Telephone Company, Incorporated D/B/A Ameritech Indiana For The Commission to Decline to Exercise in Whole or in Part Its Jurisdiction Over, And Regulatory Procedures For, Ameritech Indiana's Provision of Retail and Carrier Access Services Pursuant to I.C. 8-1-2.6 et. seq*., Cause No. 40849 (April 28, 1999).

[4] Id. at p. 5.

[5] Id. at p. 4.

A copy of this decision is attached is attached to this letter.

SBC is not the only RBOC that has broken a promise to invest in broadband infrastructure. Chapter 30 of the Pennsylvania Public Utility Code, 66 Pa. 3001-3009, which became law in 1993, authorizes a local exchange carrier to petition the Pennsylvania Public Utility Commission ("Pennsylvania commission") for approval of an alternative form of regulation in return for the commitment to implement a Network Modernization Plan ("NMP"). In October 1993, Bell Atlantic Pennsylvania (now Verizon) filed a petition for alternative regulation under Chapter 30 that included a commitment to "deploy the technologies necessary to provide universal broadband availability in 2015."[6] The original proposal stated that Verizon would deploy technology capable of supporting services requiring bandwidth of at least 45 megabits per second ("Mbps") or its equivalent.[7] This commitment was subsequently revised in February 2000, with the approval of the Pennsylvania commission, to require the following: "…[Verizon will] provide services at speeds of 45 Mbps or greater to a customer location within five business days…"[8]

Like SBC, Verizon broke its promise to the State of Pennsylvania. Verizon notified the Pennsylvania commission in 2000 that it intended to meet its Chapter 30 requirements by deploying Digital Subscriber Line Services ("DSL") throughout the state. Of course, Verizon's unilateral decision to deploy DSL service meant that Verizon, by definition, was refusing to meet its broadband deployment commitment. This is because: (1) Verizon's DSL offering only can achieve speeds of 1.5 Mbps in one direction, which is much slower than the 45 Mbps that Verizon had promised; (2) Verizon's DSL product can only achieve 1.5 Mbps, or the slowest symmetrically available speed allowed by Chapter 30; and (3) DSL is a distance sensitive technology that can only achieve its maximum speed when the customer is less than 12,000 feet from the central office, thereby preventing most residential customers from achieving even 1.5 Mbps.[9]

Furthermore, the Pennsylvania commission found that Verizon's failure to meet its infrastructure deployment commitments extended beyond its unilateral substitution of an inferior narrowband technology. The Pennsylvania commission expressed concern that Verizon would not deploy broadband to 50 percent of rural customers by 2004, a requirement of the NMP, and that residential DSL deployment lagged significantly behind deployment to business customers.[10] The Commission concluded that "a significant number of Pennsylvania customers will not have DSL, a narrowband service as presently offered by Verizon PA, available before

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6 *Re: Verizon Pennsylvania, Inc. Petition and Plan for Alternative Form of Regulation Under Chapter 30 2000 Biennial Update of Network Modernization Plan*, P-00930715 (March 28, 2002) at p. 2.

7 Id.

8 Id. at p. 6.

9 Id. at p. 13.

10 Id. at p. 15.

2015. The commission is concerned that Verizon PA has no statutorily mandated broadband service available now, or plans for it in the future, for residential customers."[11]

Of course, this assumes that Verizon's DSL offering is deployed under optimal conditions using prudent engineering principles. A recent consumer class action lawsuit against Verizon alleges that during the time period Verizon made the above referenced representations to the Pennsylvania commission, Verizon was fully aware that it would be unable to provide the service it promises in its advertising and that its DSL subscribers would experience significant delays in obtaining technical support.[12] Therefore, it is unclear whether Verizon can even provide high-quality narrowband services to a limited customer base in the State of Pennsylvania.

A copy of this Pennsylvania commission's decision is attached to this letter.

Regulation Promotes Competition

State regulators, who have first-hand experience with the RBOCs' broken promises, correctly rejected the argument that obligations which require the incumbent local exchange carrier ("ILEC") to unbundled pieces of its network for use by competitors will somehow discourage investment in broadband facilities. For example, on March 14, 2001, the Illinois Commerce Commission ("ICC") issued a decision implementing the FCC's December 1999 Line Sharing Order that required SBC to allow competitors to line-share over *all* loop facilities, including fiber-fed loops provided through SBC's Project Pronto network overlay.[13] The ICC imposed this obligation despite threats from SBC Chairman Chief Executive Officer Ed Whitacre, Jr. that SBC would terminate DSL deployment in Illinois. As stated by ICC Commissioner Terry S. Harvill, SBC's ability to make this threat demonstrated the need for the continued implementation of such unbundling obligations:

> As we all know, the competitiveness of a market can easily be measured by the ability of one player to unilaterally control the supply of a good. Mr. Whitacre's statement is clear: **Ameritech Illinois controls the market so completely that it can determine if more than a million customers in Illinois will have access to broadband services.** If the market were competitive, SBC/Ameritech would not be able to unilaterally halt the deployment of DSL infrastructure and deny those customers advanced telephony services.[14]

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11 Id. at p. 16.

12 Complaint, *Forrest v. Verizon*, at ¶ 21. Accessible at www.cmht.com/casewatch/cases/verizon.pdf

13 *Illinois Bell Telephone Company, Proposed Implementation of High Frequency Portion of Loop ("HFPL"/Line Sharing Service)*, Order, Docket No. 00-0393 (Illinois Commerce Commission March 14, 2001) *aff'd by* Order on Rehearing (September 26, 2001).

14 Letter from Terry S. Harvill, Commissioner, Illinois Commerce Commission, to J. Dennis Hastert, Speaker of the U.S. House of Representatives, March 29, 2001. (emphasis in original)

Notably, arbitrators for the Public Utility Commission of Texas[15] and the Public Service Commission of Wisconsin[16] imposed similar line-sharing obligations on SBC, despite SBC's threats that it would not deploy DSL in these states, either.

CompTel urges the FCC to learn from the experience of the state commissions and reject the RBOCs' arguments that restricting or eliminating the FCC's current unbundling obligations will spur broadband deployment. These are empty promises, as demonstrated by the state experiences described in the attached orders.

Instead, unbundling obligations imposed by the FCC, with implementation assistance from the state commissions, have been the catalyst for the explosive growth of broadband, both by new entrants and incumbent carriers. This is because unbundling obligations allow new entrants to compete directly with the incumbent, creating the competitive pressure needed to force the ILECs to deploy broadband. Indeed, DSL technology was first developed by the ILECs, though it was not deployed for fear that it would undercut their more expensive (and profitable) T-1 and ISDN services. Because of the DSL competition made possible by the FCC's unbundling policies, notably the line-sharing requirement, the ILECs have been forced to deploy broadband in response to competitive pressure. They will only continue their broadband deployment if DSL competition via line-sharing remains available.

Moreover, as the third anniversary of the FCC's Line Sharing Order approaches, the FCC must acknowledge the success of its broadband policies to date. According to the FCC's own figures, by year-end 1999, there were only 115,000 DSL subscribers in the U.S. As soon as the FCC adopted line sharing rules, broadband deployment grew exponentially: by year-end 2001, ADSL lines in service totaled 2.7 million, an increase of 36% over the first half of 2001.[17] That growth continues to expand at a rapid pace. Today, at the end of the third quarter of 2002, there are about *six million* DSL lines in service in the U.S. Notably, the RBOCs continue to report record DSL deployment levels, despite their complaints about the FCC's onerous unbundling obligations.

In conclusion, I urge the FCC to continue requiring the incumbent local exchange carriers to provide access to their networks on an unbundled basis so competitive carriers can provide broadband services to consumers. The FCC must reject the RBOCs' alleged commitment to deploy broadband if they are freed from regulation based on their long track record of broken promises. In particular, the ILECs must be required to provide access to the high-frequency portions of their loop plant so that competitors can provide DSL services to consumers and small businesses. This obligation has been vital to the development and deployment of broadband.

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15 *Petition of Rhythms Links, Inc. Against Southwestern Bell Telephone Company for Post-Interconnection Dispute Resolution and Arbitration Under the Telecommunications Act of 1996 Regarding Rates, Terms, Conditions and Related Arrangements for Line Sharing*, Revised Arbitration Award, Docket 22469, (Public Utility Commission of Texas September 20, 2001).

16 *Investigation Into Ameritech Wisconsin's Unbundled Network Elements*, Final Decision, Docket No. 6720-TUI-161, 109-110 (Wisconsin Public Service Commission March 21, 2001).

17 http://www.fcc.gov/Bureaus/Common_Carrier/News_Releases/2002/nrcc0201.html

Indeed, without line sharing, there would be no competition in this market. Competition benefits consumers by fostering innovation, higher quality services, and lower prices. The FCC must preserve its existing line-sharing rules if it wants the broadband revolution to continue.

Please contact me if you have any questions about the matters contained herein.

Sincerely,

H. Russell Frisby, Jr.
President

cc: Chairman Powell
Commissioner Abernathy
Commissioner Copps
Commissioner Martin
C. Libertelli
M. Brill
D. Gonzalez
J. Goldstein
W. Maher
M. Carey
R. Tanner
J. Miller
T. Navin

Measuring the Economic Impact of the Telecommunications Act of 1996: Telecommunications Capital Expenditures (1996–2001)

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October, 2002

Executive Summary

Enactment of the Telecommunications Act of 1996 removed the remaining legal barriers to competition for local telecom service, unleashing an explosion of capital spending by companies rushing to build competing networks and offer competitive services. Capital spending by newly formed competitive carriers, existing long distance carriers (IXCs) and other telecommunications providers, seeking to benefit from opportunities promised by the new law, or reacting to the resulting wave of competition, stimulated capital investment in excess of that which would have been made had the law not been passed.

New Paradigm Resources Group, Inc. (NPRG) has conducted an analysis of spending across the CLEC, Utility Telecom, IXC, ILEC, and cable industries to determine just how much of total capital spending during the period 1996 to 2001 is attributable to the '96 Act. NPRG aggregated capital spending among competitive carriers, as direct beneficiaries of the '96 Act, and measured the effect of enhanced competition on the remainder of the competitive telecom sector. As a result, we conclude that over $150 billion in telecommunications capital expenditures resulted from enactment of the law. The following chart reflects the capital spending by the respective market segments analyzed.

Total '96 Act-Related Capital Expenditures
By Carrier Catergory
1996-2001
(Millions)

Carrier Category	*Total Capital Expenditures*
Voice-Focused CLECs	$44,451
Independent Operating Carrier (IOC)-Owned CLECs	$1,416
Utility Telecom CLECs	$2,072
DLEC & Fiber LEC	$16,357
Utility Telecoms	$6,600
Additional IXC Capital Spending on Equipment Due to the '96 Act	$13,951
Additional ILEC Capital Spending on Equipment Due to the '96 Act	$47,083
Cable Broadband	$18,400
Total Capital Expenditures	**$150,330**

Source: New Paradigm Resources Group, Inc.

This total spending level attributable to the '96 Act represents 2% of all U.S. capital spending and 28% of all communications spending by all market participants – wireline, wireless and cable – for the period. The amount spent equals more than $520 for every man, woman and child in the country. This reflects a significant investment in our nation's telecommunications infrastructure, which will create tomorrow's economic growth.

The Purpose of this Report

One principal goal of the Telecommunications Act of 1996 ('96 Act) was to create a new national regulatory environment that stimulates the creation of technologically advanced, competing, yet interconnected telecommunications networks, over which new and existing carriers would offer consumers a host of familiar and new communications services. Notwithstanding the current state of the telecommunications industry, this goal has been largely realized.

The capital expenditures pumped into the telecommunications industry beginning in 1996 financed the construction of a massive stock of communications infrastructure. Some would argue that this infrastructure will provide the asset base upon which the economy of the 21st century will be built.

That having been said, we are unaware of any study to date that actually has attempted to measure the stimulative effect the '96 Act has had on capital expenditures. Therefore, in this study New Paradigm Resources Group, Inc. (NPRG)[1] has quantified the total dollar amount of capital investment contributed by major carrier groups—Competitive Local Exchange Carriers (CLECs), Utility Telecoms, long distance carriers (IXCs), Incumbent Local Exchange Carriers (ILECs) and cable broadband providers—during the period from 1996 to 2001, which is attributable to the enactment of the '96 Act.

Our Methodology

In order to measure capital spending that could reasonably be attributed to the existence of the new law, NPRG took two steps. First, we aggregated the total capital expeditures made by the facilities-based CLECs. Although a significant handful of competitive carriers were formed as competitive access providers (CAPs) prior to the '96 Act, the CLECs certainly owed their ongoing operations to its enactment.

Second, we identified and allocated relevant capital spending by the Utility Telecoms, IXCs, and ILECs. The '96 Act had the effect of creating actual and perceived growth in wholesale services demand, spurring spending by the utilities and IXCs. The law also had the effect of pushing the ILECs to spend more, both to comply with pro-competitive mandates and to take advantage of new opportunities created by the '96 Act.

In all of these allocation exercises, NPRG sought to be conservative in attributing spending to the '96 Act and in excluding items from double counting. Where there was subjectivity involved in whether to include an item as associated with a response to the Act, we tended to exclude that item from our allocation. However, many of these

[1] New Paradigm Resources Group, Inc. (NPRG) is a research and consulting firm focusing on competitive telecommunications companies and markets. On the basis of its ongoing research and analysis, NPRG publishes a range of telecom segment reports. These reports include: *CLEC Report*™ (Editions 1-16), *Broadband Provider Report*™ (Editions 1-2), *Utilities in Telecom Report*™ (Editions 1-2), *Competitive IOC Report*™, *Gig-E/MAN Report*™, *DSL Report*™ (Editions 1-2), and *BLEC Report*™ (Editions 1-2).

subjective topics were affected by the Act. Finally, in cases where we have attempted to measure the indirect, or flow-through effects of the Act we have been scrupulously conservative.

What the '96 Act Did

Immediately after passage, the '96 Act spurred communications investment and spending, most directly within the facilities-based Competitive Local Exchange Carrier (CLEC) sector. But the '96 Act was by no means the beginning of the boom, nor was it the only factor. In fact, Competitive Access Providers (CAPs) such as Brooks, MFS, and TCG already deployed local telecom infrastructure before the '96 Act.[3] But what the law did do was nationalize a public policy that was already moving away from a regulated monopoly regime in favor of competitive markets for local dial tone. Investors knew that once let out, the genie would not be returned to the bottle.

Moreover, by 1996, the Internet boom was underway, a motivating stimulant that pushed carriers to lay fiber in expectation of 1,000% per year growth in data traffic.[4] Coupled with a simultaneous explosion of new technology announcements, the Internet and wider "dot-com" mania certainly had an impact on carriers' decisions to spend dollars on capital goods, in particular fiber infrastructure.

Table 1:
Total U.S. Communications Service Provider Capital Expenditures[2]
(1996-2001)

Year	Communications Capital Expenditures (billions)	Year-over-Year increase
1994	$37	-
1995	$38	3%
1996	$48	26%
1997	$57	19%
1998	$77	35%
1999	$99	29%
2000	$135	36%
2001	$114	-16%
Total for period 1996-2001	**$530**	**138%**

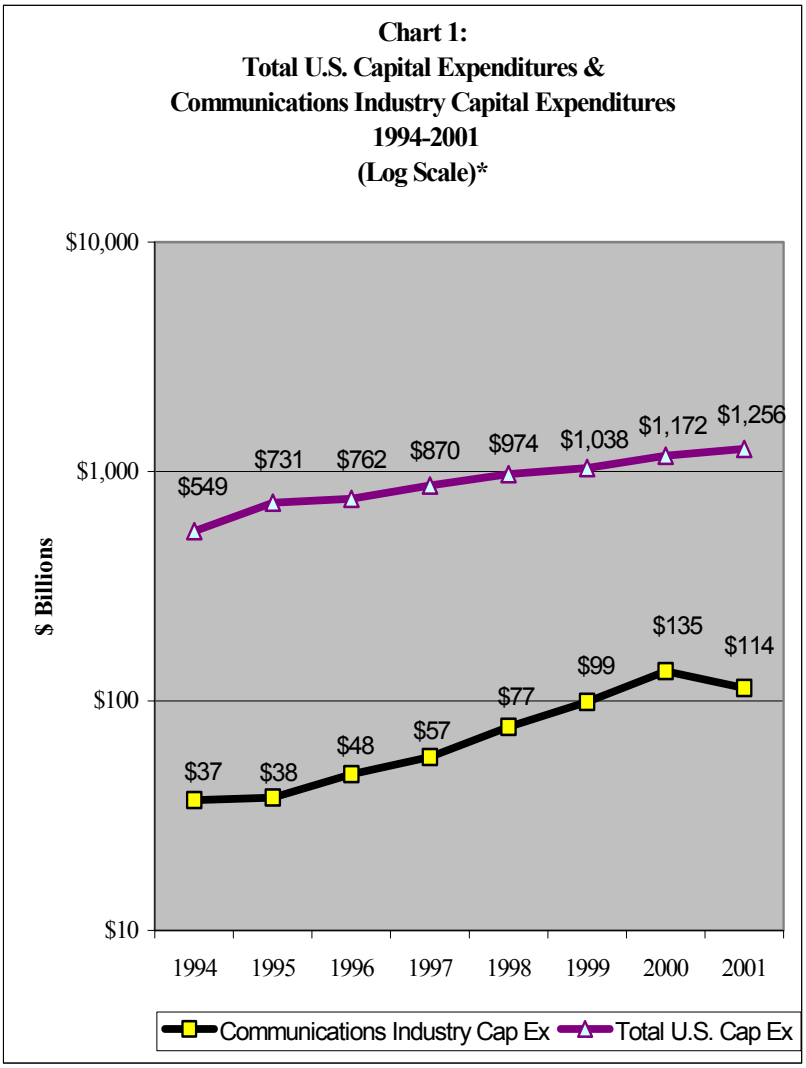
Source: U.S. Census Bureau, NPRG Analysis & Estimates

And spend they did (see Table 1 and Charts 1 and 2). The nearly flat 3% yearly increase of 1995 withers in the face of an astounding communications capital spending growth rate of 36% in 2000. During the same period, communications as a percentage of overall capital spending also jumped, more than doubling from 5% to almost 12%.

[2] "Total U.S. Communications Service Providers Capital Expenditures" is derived from the U.S. Census Bureau's *Annual Capital Expenditures* reports for 1994-2000. It includes wired, wireless, cable, satellite, telecommunications reseller, and other telecom capital expenditures for 1999 and 2000. For 1996-1998, the number is derived from a single category entitled "Telephone and other communications services." The totals for 2001 are NPRG estimates.

[3] For more on the evolution of CAPs into CLECs, see p. 32 of Richard G. Tomlinson, Ph.D, *Tele-Revolution, Telephone Competition at the Speed of Light, A History of the Creation of the Competitive Local Telephone Industry 1984-2000*, May 2000, Penobscot Press. See also Martin F. McDermott III, *CLEC, An Insider's Look at the Rise and Fall of Local Exchange Competition*, July 2002, Penobscot Press.

[4] See references to WorldCom in *Wall Street Journal*, "Behind the Fiber Glut," September 26, 2002.

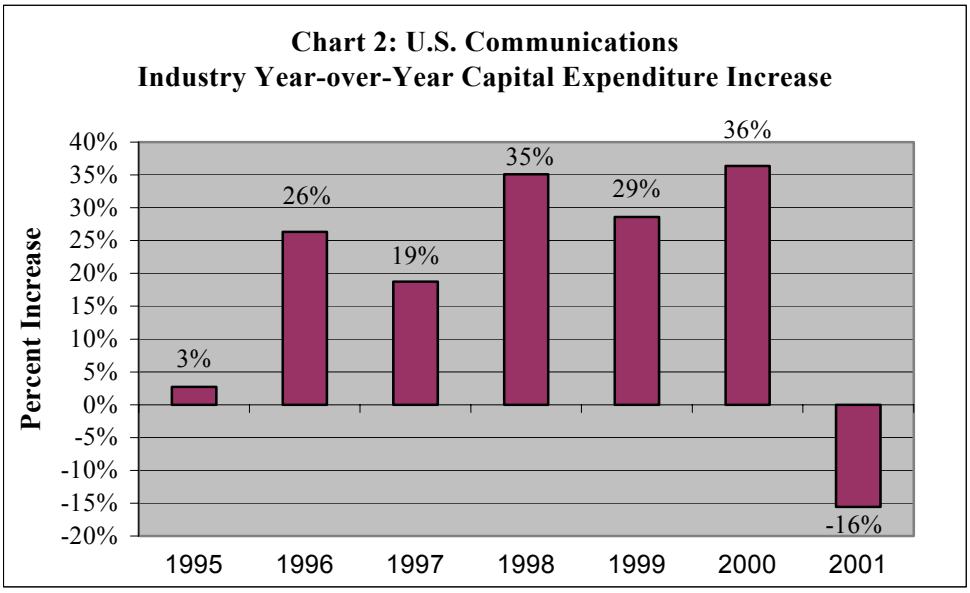


Source: U.S. Census Bureau, NPRG Analysis & Estimates

** Using this log rhythmic scale, we can see that communications capital expenditures grew at a faster rate than overall capital spending across the economy, jumping from a 6.3% share of all capital expenditures in 1996 to a high of 11.5% in 2000, the year of highest carrier spending. This points to increased capital expenditures after the '96 Act.*

The '96 Act certainly concentrated the attention of entrepreneurs and investors on competitive local telecom as an opportunity to sell local voice and data service. This in itself was an opportunity for profit.

But coupled with the decade-earlier breakup of the long distance monopoly, the '96 Act also induced the belief that communications was achieving complete competition, bringing an almost messianic belief that there would be massive growth, that the resulting growth would be fast, and that it would drive the development of a new economy predicated on rich, pervasive connectivity.



Source: U.S. Census Bureau, NPRG Analysis & Estimates

It was universally agreed that the copper-based local exchange was a bottleneck that was the single most dangerous impediment to the rollout of advanced connectivity. The '96 Act was expected to facilitate the breaking of that bottleneck. By removing the legal barriers to the last mile, the '96 Act motivated widespread desire to invest in infrastructure deployment and services rollout. From a rational perspective, the risk of an unbreakable local bottleneck was mitigated.

The '96 Act is more fundamental than the Internet explosion or deployment of new technologies. The law formally coalesced these forces around the notion that customers could now be connected. From a rational perspective, the risk of an unbreakable local bottleneck was now largely mitigated.

The after-effect of the '96 Act was to further chisel away at this risk by rapidly creating a competitive local market and market-support structures.[5] The growing list of CLECs and other competitive carriers included many that were competing with the Bell Operating Companies (BOCs) to offer voice services. But many others also began to focus on data transport and connectivity. The likes of Covad, NorthPoint and Rhythms spurred DSL deployment, ultimately pushing the larger BOCs to move beyond their fear

[5] See Tomlinson and McDermott for detail on the rapid development of the CLEC market and its associated trade groups. NPRG's editions of the *CLEC Report*™ quantitatively describe the speed of the segment's growth, with the 1997 edition (looking back at 1996) assessing the activities of no fewer than 90 companies providing or about to provide competitive telecom service and the 1998 edition covering 160 companies.

of cannibalizing dedicated access revenues by deploying DSL. Still others such as MFS and Focal were at the vanguard of offering competitive collocation and local connectivity to ISPs, altering the process and economics of Internet provisioning.[6]

As a result of the '96 Act, five major groups of carriers set out to re-build the last mile. The facilities-based CLECs, Utility Telecoms, IXCs, ILECs, and cable broadband providers spend considerable amounts in anticipation of participating in this telecom revolution. These are the groups we have assessed for this report.

Facilities-Based CLEC Spending

We first look at the capital spending of the companies directly stemming from the '96 Act—the facilities-based CLECs. To capture the capital expenditure total for this group, NPRG executed a two-step process. First, we broke down the facilities-based CLEC industry into four sub-categories: Traditionally Voice-Focused CLECs; Independent Operating Carrier (IOC)-owned CLECs; Utility CLECs; and data CLECs (DLECs)[7] and Fiber LECs (See Table 2 below). This enabled us to make sure that all relevant companies were considered. Second, we calculated capital expenditure totals for all companies, aggregated these numbers by sub-category, and then created a total aggregating all four sub-categories.

Table 2: Facilities-Based CLEC Sub-Categories
Traditionally Voice-Focused CLECs
IOC-Owned CLECs
Utility Telecoms
DLECs (including BLECs) & Fiber LECs

Source: New Paradigm Resources Group, Inc.

NPRG utilized its proprietary data and research (primary/secondary) and relied on its expertise in the telecommunication space as a basis for the first sub-category, facilities-based CLECs. Table 3 lists some of the carriers that we analyzed for this sub-category. We aggregated yearly capital expenditure numbers for all public and private carriers[8] for the years 1996-2001.

[6] See Tomlinson, p. 291, in which MFS Chairman Jim Crowe is quoted as saying "when the players are able to bundle local and long distance Internet service provision, there will be an alignment. There will be tremendous opportunity for those that have facilities in the bottleneck portion of that equation which continues to be the local loop…Our facilities in the local loop are no less valuable for the provision of Internet services than they are for the provision of voice services."

[7] Through our coverage of the DLECs, we also look at the Building Local Exchange Carriers (BLECs).

[8] For private carriers, we attempt to capture a number or range through ongoing discussions with management. We also develop capital expenditure models based on discussions with a wider group of personnel at each company, on an analysis of the amount of infrastructure deployed by each company, and on an assessment of total funding.

We chose to exclude the capital spending of CLEC resellers and ISPs that have invested in infrastructure for planned deployment of voice or for Internet phone service. Reseller spending would have likely occurred in the absence of the '96 Act. Moreover, it is certainly minimal. Regarding Internet telephony expenditures, it is doubtful that a realistic estimate could be calculated. And again, the capital spending total is small and would not materially affect overall numbers.

Table 3: A Sampling of Traditionally Voice-Focused CLECs	
Allegiance Telecom, Inc.	Mpower Communications
AT&T Corp. (Local)	Time Warner Telecom, Inc.
Cablevision Lightpath, Inc.	Winstar Communications
Focal Communications Corp.	WorldCom, Inc. (Local)
McLeodUSA, Inc.	XO Communications

Source: New Paradigm Resources Group, Inc.

Table 4 lists our capital expenditure calculations for the traditionally voice-focused CLECs by year for the period 1996-2001.

Table 4: Traditionally Voice-Focused CLEC Capital Expenditures 1996-2001 (Millions)

Year	1996	1997	1998	1999	2000	2001	Total (1996-2001)
Capital Expenditures	$1,550	$3,076	$5,938	$9,999	$13,890	$9,998	$44,451

Source: New Paradigm Resources Group, Inc.

The next sub-category was those IOC-owned CLECs pursuing an edge-out strategy.[9] Edge-out CLECs have relied on their parents' infrastructure and reputations to compete in adjoining BOC territories. But for the '96 Act, these carriers would have been prohibited from such an "out-of-territory" strategy. Table 5 provides a sampling of the 102 carriers analyzed for this sub-category.

Table 5: A Sampling of IOC-Owned CLECs	
CenturyTel, Inc.	Northland Communications Group
CTSI, Inc.	NTELOS, Inc.
HickoryTech	Otter Tail, Inc.
Logix Communications Enterprises, Inc.	TDS Metrocom
Madison River Communications	XIT Communications

Source: New Paradigm Resources Group, Inc.

[9] See NPRG's *Competitive IOC Report*™ for more information on 102 such operations.

NPRG fully analyzed 32 of the companies in the category. As for the remaining 70, we developed a model to estimate capital spending, using conservative assumptions. These 70 companies constitute a small percentage of total capital spending. For example, the 2001 estimated capital expenditure total for these 70 came to only 28.5% of ALLTEL's entire competitive telecom spending, and less than 10% of all category capital spending for the year.[10]

Table 6 provides the yearly totals for the IOC-owned CLEC sub-category.

Table 6:
IOC-Owned CLEC Capital Expenditures
1996-2001
(Millions)

Year	1996	1997	1998	1999	2000	2001	Total (1996-2001)
Capital Expenditures	$0	$2	$81	$260	$502	$571	$1,416

Source: New Paradigm Resources Group, Inc.

The next sub-category of CLECs we analyzed for this study was the utility-owned CLECs.[11] Table 7 provides a sampling of the 10 companies assessed.

These carriers are CLECs organized by utility companies to take advantage of the '96 Act. They differ from the utility telecoms in the next section in that, as CLECs, they provide local dial tone. The utility telecoms are non-certified wholesale transport providers.

Table 7:
A Sampling of Utility CLECs

Black Hills FiberCom, L.L.C.	MP Telecom
Digital Teleport Inc.	Reliant Energy Communications, Inc.
ExOp of Missouri, Inc.	TXU Communications

Source: New Paradigm Resources Group, Inc.

Table 8 provides the yearly totals for the utility CLEC sub-category.

[10] It also important to note here that while we developed a complete list of IOCs presently edging out of territory through a CLEC operation, many of the other approximately 975 ILECs across the U.S. are preparing to roll out such service. Some have only upgraded their technology with the expectation of edging out of territory and begin competing with other ILECs; others have actually purchased additional equipment for their CLEC strategy. We have not attempted to capture an estimate of this total as it would be difficult to measure and any calculation would be highly speculative.

[11] See NPRG's *Utlities in Telecom Report*™, 2nd Edition, for more information on these carriers.

Table 8: Utility CLEC Capital Expenditures 1996-2001 (Millions)							
Year	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**Total (1996-2001)**
Capital Expenditures	$30	$40	$121	$652	$580	$649	$2,072

Source: New Paradigm Resources Group, Inc.

The next sub-category, the DLECs and Fiber LECs, is itself made up of many sub-groups, including the competitive DSL and Gigabit-Ethernet (Gig-E) players (see Table 9 for a sampling of these companies), the Building Local Exchange Carriers (BLECs) (see Table 10), and the Fiber LECs (see Table 11).[12]

Table 9: A Sampling of DLECs (DSL & Gig-E sub-group)	
@Link Networks	IP Communications
Cogent Communications	NorthPoint Communications
Covad Communications Company	Rhythms NetConnections
DSL.net, Inc.	Sphera Optical Networks, Inc.
GiantLoop Network Inc.	Yipes

Source: New Paradigm Resources Group, Inc.

Within this category, we included capital expenditure data from 15 DSL and 10 Gig-E/MAN providers, all of which are facilities-based CLECs. We have also thoroughly analyzed all eight of the CLEC-certified fiber layers, as well as the 17 carriers that pursued the BLEC model between 1999 and today.

Table 10: A Sampling of DLECs (BLEC sub-group)	
Allied Riser Communications	EurekaGGN
Cypress Telecommunications Corporation	Everest Broadband Networks
e-link Communications	PhatPipe

Source: New Paradigm Resources Group, Inc.

[12] See NPRG's *Broadband Provider Report™, DSL Report™, Gig-E/MAN Report™, and BLEC Report™* for more about the carriers in this sub-category.

Table 11: A Sampling of Fiber LECs	
American Fiber Systems, Inc.	Looking Glass Networks
Cambrian Communications	Metromedia Fiber Network, Inc.
FiberNet Telecom Group, Inc.	NEON Optica, Inc.
Level 3 Communications	Parker Fibernet, L.L.C.

Source: New Paradigm Resources Group, Inc.

Table 12 provides the yearly totals for the DLEC and Fiber LEC sub-category.[13]

Table 12: DLEC & Fiber LEC Capital Expenditures 1996-2001 (Millions)							
Year	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**Total (1996-2001)**
Capital Expenditures	$0	$250	$583	$3,581	$6,144	$5,799	$16,357

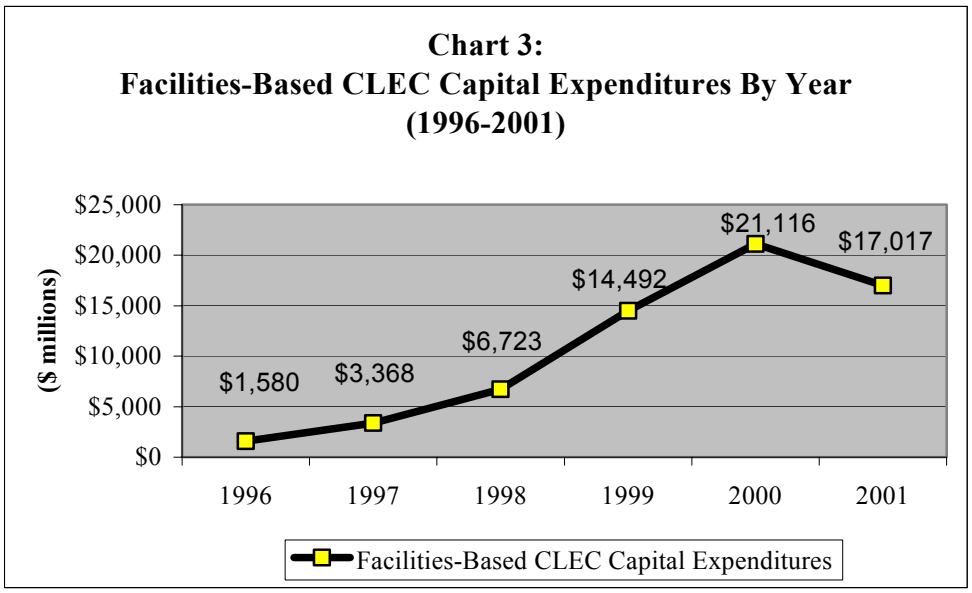
Source: New Paradigm Resources Group, Inc.

By adding up these four CLEC sub-categories we get $64.3 billion, the lower bound for our analysis of '96 Act-related capital spending (see Table 13 and Chart 3).

Table 13: Total Facilities-Based CLEC Capital Expenditures 1996-2001 (Millions)							
Year	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**Total (1996-2001)**
Capital Expenditures	$1,580	$3,368	$6,723	$14,492	$21,116	$17,017	**$64,296**

Source: New Paradigm Resources Group, Inc.

[13] As a point of methodology, NPRG conducted its analysis to avoid double counting between this CLEC analysis and our long distance carrier analysis below. Thus, special consideration was given to carriers such as Level 3, which have both local and long distance spending components.



Source: New Paradigm Resources Group, Inc.

Utility Telecom Spending

Apart from the utility CLECs analyzed above, NPRG fully analyzed 35 utility telecom companies (see Table 14). In the course of conducting research on the dark fiber market, moreover, we assessed a wider array of utility-related communications operations.[14]

Our ongoing research illustrates that the motivation of these companies' utility parents to enter communications was a reaction to metro-area growth stemming out of CLEC growth—in other words, out of the '96 Act. We corroborated this point during our dark fiber research,[15] as well as during research into wholesale private line carriers.[16] NPRG sees these carriers' spending as a direct result of the '96 Act.

As with the facilities-based CLEC analysis above, we conducted capital expenditure analysis across all the companies and aggregated company totals.

[14] NPRG, *Assessment of Dark Fiber Providers*, January 2002 (78 Pages).

[15] *Ibid.*

[16] NPRG, *Wholesale Special Access: Markets, Competitors, Products and Trends*, September 2002 (681 pages).

Table 14: A Sampling of Utility Telecom Operations	
Aerie Networks, Inc.	PECO*Adelphia* Communications
AFN Communications	Progress Telecom
C3 Networks	Seren Innovations
El Paso Global Networks	Sierra Pacific Communications
FPL FiberNet, LLC	Touch America
GPU Telecom Services, Inc.	Vectren Communications Services

Source: New Paradigm Resources Group, Inc.

Table 15 lays out the capital spending resulting from the analysis we conducted of this category.

Table 15: Utility Telecoms Capital Expenditures 1996-2001 (Millions)	
	Total (1996-2001)
Utility Telecoms Capital Expenditure Total	**$6,600**

Source: New Paradigm Resources Group, Inc.

Additional IXC Capital Spending on Equipment Due to the '96 Act

For long-haul carrier capital spending on equipment, NPRG calculated an estimate attributable to the '96 Act.

IXC capital spending on equipment jumped dramatically in anticipation of larger amounts of voice and data coming out of the metro due to the '96 Act, as well as data increases stemming from the Internet expansion, itself spurred on by the effects of the new law. After the '96 Act, long-haul providers' spending was primarily on "fiber cable, high-speed SONET, and DWDM optical transport systems, digital cross connects, ATM switches/gateways and IP routers," equipment intended to increase their ability to deal with the increasing demand for bandwidth at the local exchange level.[17]

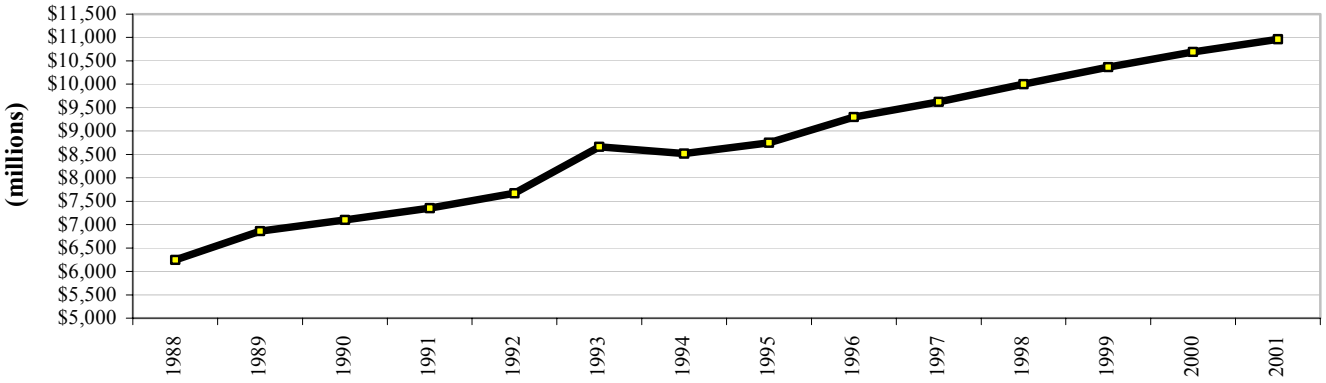
We began by setting out to find pre-1996 capital spending data. Based on a set of 1988-1995 central office (CO) equipment expenditure data,[18] we forecasted a post-1996

[17] Quote is from Skyline Marketing Group, *CapEx Report™,* First Quarter 1999. This view, however, is voiced across numerous other studies conducted during the period.

[18] TIA's Carrier Equipment Spending Charts*,* 1997-2002 *Telecommunications Market Review and Forecast* reports.

trend line to develop a picture of what equipment spending would look like in the absence of the '96 Act (see Chart 4). By comparing this "What if?" forecast with actual post-1996 spending, we calculated a percentage spread between actual and expected spending.

Chart 4:
Capital Spending on Central Office Equipment
(Post-1996 Trend Estimated without Effects of '96 Act)



We chose to apply this actual-over-expected calculation only to long-haul *equipment* spending. This minimized the possibility of capturing spending on new Operational Support Systems (OSS) and other purely operational improvements that carriers, like many companies during the 1990s, were drawn into by the IT boom.

NPRG also lowered the actual-over-expected percentage spread before applying it to the range of equipment beyond CO expenditures. The logic here is that these other forms of equipment spending might have been expected to grow more quickly post-1996 than CO equipment spending.[19]

The revised percentage spreads illustrated in Table 16 were then applied to the expected yearly equipment capital spending totals we developed.[20] Chart 5 illustrates actual expenditures relative to expected capital spending for the period. [21]

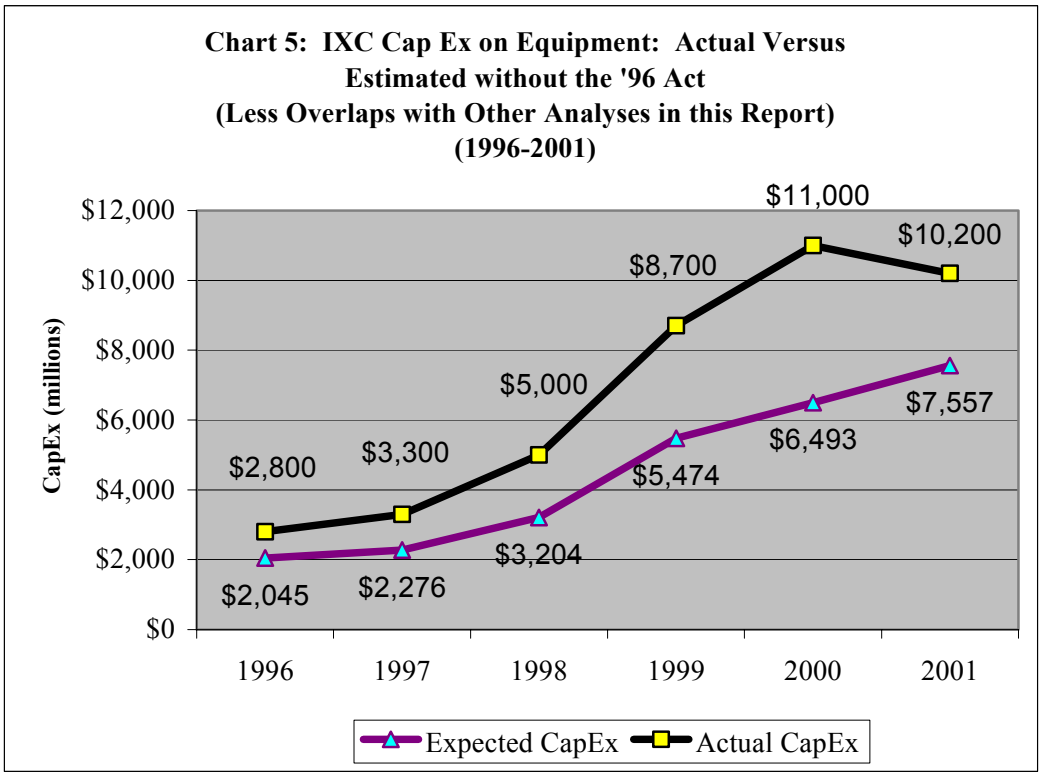
[19] A total of two basis points was shaved from the spreads for 1996-97, three from 1998-99, four from 2000, and two from 2001.

[20] TIA, *Telecommunications Market Review and Forecast 2002.*

[21] The totals were vetted for all overlapping between spending in this analysis and IXC capital expenditures related to CLEC operations and included in the CLEC analysis above.

Table 16: Calculated Yearly Spreads Actual over Expected	
Year	**Spread**
1996	37%
1997	45%
1998	56%
1999	59%
2000	69%
2001	34%

Source: New Paradigm Resources Group, Inc.



Source: New Paradigm Resources Group, Inc.

Table 17 breaks the final calculation down by year for the period 1996-2001, providing us with the surplus of IXC equipment capital spending attributable to affects of the '96 Act.

Table 17: Calculation of '96 Act-Related IXC Capital Expenditures on Equipment (Less Overlaps with Other Analyses in this Report) 1996-2001 (Millions)			
Year	**Expected Equipment Capital Spending**	**Actual Equipment Capital Spending**	**Incremental Increase**
1996	$2,045	$2,800	$755
1997	$2,276	$3,300	$1,024
1998	$3,204	$5,000	$1,796
1999	$5,474	$8,700	$3,226
2000	$6,493	$11,000	$4,507
2001	$7,557	$10,200	$2,643
TOTAL	**$27,049**	**$41,000**	**$13,951**

Source: New Paradigm Resources Group, Inc.

Additional ILEC Capital Expenditures on Equipment Due to the '96 Act

It has not only been the IXCs that increased capital spending as a result of the '96 Act. The Incumbent Local Exchange Carriers (ILECs), including the Bell Operating Companies (BOCs) and Independent Operating Companies (IOCs), also increased their capital expenditures in response to the newly competitive environment.

The ILECs' portion of total wireline equipment spending fell from 76% to 66% between 1996 and 2001. The CLECs and IXCs boosted capital spending much more aggressively than the ILECs from 1996 to 1999. In 2000, however, the ILECs increased their capital expenditures on equipment by a massive 21%.[22] As they were forced past their fear of cannibalizing their dedicated access revenues by the growth in competitive DSL, they started pumping up their capital spending in response to what was clearly real competition in both the voice and data categories. This competition and the resulting capital spending increases were a direct effect of the '96 Act.

NPRG measured the ILECs' additional capital spending using largely the same techniques as applied to the IXCs above. Again, we applied the percentage spreads of actual over expected from Table 15, and pulled out capital spending that overlaps with other analyses. The calculations follow in Table 18.

[22] All previous statistics in this paragraph taken from TIA, *Telecommunications Market Review and Forecast 2002.*

Table 18: Calculation of '96 Act-Related ILEC Capital Expenditures on Equipment (Less Overlaps with Other Analyses in this Report) 1996-2001 (Millions)			
Year	**Expected Equipment Spending**	**Actual Equipment Spending**	**Incremental Increase**
1996	$13,608	$18,636	$5,028
1997	$14,251	$20,659	$6,408
1998	$14,409	$22,486	$8,077
1999	$15,144	$24,070	$8,926
2000	$17,061	$28,903	$11,842
2001	$19,447	$26,249	$6,802
TOTAL	**$93,920**	**$141,003**	**$47,083**

Source: New Paradigm Resources Group, Inc.

Effect on Cable Broadband Capital Spending

Cable's ongoing deployment of telephony service is a direct result of the '96 Act. We captured these cable capital expenditures related to telephony in the CLEC analysis above. It is also important to consider, however, certain other aspects of the cable industry's capital spending.

Cable's aggressive broadband deployment is another effect of the '96 Act. The reason we assert this is two-fold. First, the '96 Act created a core of aggressive competitors that appeared to be creating an alternate infrastructure to compete with the cable companies.[23] The introduction of competitors aggressively talking about convergence—and thus the potential for combined video, voice and data—forced cable operators into a faster rollout of broadband data services. Second, the competition that all sides began feeling as a result of more carriers pushed most players into marketing bundles of services. Again, this put pressure on the cable companies to aggressively deploy broadband as part of a wider package of goods to compete with other broadband industries.

To capture the amount of capital spending associated with cable's broadband rollout, we began by calculating the number of cable broadband subscribers passed, using the latest available figures (see Table 19).

[23] The development of broadband infrastructures generally, but IP and other packetized services specifically, suggested the convergence of video, voice, and data.

Our next step was to determine how much capital, per subscriber, was expended to deploy cable broadband. This data was uncovered in investment banking analyses of the industry. [24]

Table 19: Total Cable Broadband Subscribers (June 30, 2002)	
TOTAL	9,200,000

Source: National Cable & Telecommunications Association

Table 20 provides a breakdown of subscribers, capital spending per subscriber, and the resulting cable broadband capital expenditure total.[25]

Table 20: Total Cable Broadband Capital Spending 1996-2001	
Total Subscribers	9,200,000
Capital Expenditures per Subscriber	$2,000
Total Cable Broadband Capital Expenditures (Millions)	**$18,400**

Source: New Paradigm Resources Group, Inc.

Categories Not Included in this Report

The conclusions of this survey are also notable for the capital expenditure numbers not included:

- First, we decided not to include the capital spending of vendors, opting to include only carrier spending.

- Second, we did not include mobile wireless providers. The dynamics of this industry are different from wireline, and while their capital spending might in part have been affected by the '96 Act, this would be very difficult to measure.

[24] The range used was $2,100 to $2,650 in net present value (NPV) capital spending per residential broadband subscriber, which we rounded down to $2,000. The final range comes from First Union Securities, *Residential Broadband Carrier Industry*, September 2000, p. 17.

[25] By multiplying the $2,000 amount by Table 18's 9.2 million-subscriber total, we are left with a total of $18.4 billion in capital spending for broadband deployment. Because this calculation only included present subscribers—and not households passed—coupled with the fact that capital spending per head would be higher in the beginning of a rollout (until the total is distributed across a larger, terminal number of subscribers), this is a low-end calculation of '96 Act-related spending.

- Third, we did not include cable industry capital spending beyond that associated with telephony and broadband deployment. This is, however, an important category, one that merits analysis to better determine the connection between its capital spending totals and the '96 Act.

Conclusion

Table 21 illustrates the aggregation of totals developed across our CLEC, Utility, IXC, ILEC, and cable industry analyses. It represents a massive 28% of all communications capital spending during the period ($530 billion from Table 1).[26] This means that '96 Act-related capital spending added almost 2% to overall U.S. capital expenditures for the period, a material amount.

Table 21:
Total '96 Act-Related Capital Expenditures Across Competitive Carriers
1996-2001
(Millions)

Carrier Category	Total Capital Expenditures
Voice-Focused CLECs	$44,451
IOC-Owned CLECs	$1,416
Utility Telecom CLECs	$2,072
DLEC & Fiber LEC	$16,357
Utility Telecoms	$6,600
Additional IXC Capital Spending on Equipment Due to the '96 Act	$13,951
Additional ILEC Capital Spending on Equipment Due to the '96 Act	$47,083
Cable Broadband	$18,400
Total Capital Expenditures	**$150,330**

This total amounts to more than $520 for every man, woman and child in the country. Moreover, this capital spending reflects a significant investment in our nation's telecommunications infrastructure, which will contribute to tomorrow's economic growth.

[26] This represents all communications spending, including wireline, wireless, and cable.

ORIGINAL

STATE OF INDIANA

UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE PETITION OF INDIANA BELL TELEPHONE COMPANY, INCORPORATED D/B/A AMERITECH INDIANA FOR THE COMMISSION TO DECLINE TO EXERCISE IN WHOLE OR IN PART ITS JURISDICTION OVER, AND TO UTILIZE ALTERNATIVE REGULATORY PROCEDURES FOR, AMERITECH INDIANA'S PROVISION OF RETAIL AND CARRIER ACCESS SERVICES PURSUANT TO I.C. 8-1-2.6 *ET SEQ*.	)	CAUSE NO. 40849
	)	APPROVED: APR 2 8 1999

BY THE COMMISSION
William D. McCarty, Chairman
G. Richard Klein, Commissioner
Clayton C. Miller, Chief Administrative Law Judge

Nearly five years ago this Commission found a Settlement Agreement proposed by several of the parties in I.U.R.C. Cause No. 39705 ("Opportunity Indiana") to be in the public interest. This Commission agreed to relinquish aspects of its jurisdiction over Indiana Bell Telephone Company, Inc. d/b/a Ameritech Indiana for three and a half years based on the terms of that Settlement Agreement. Those terms included a cap on the price of basic local telephone service. Another term we accepted as part of the Settlement Agreement, found in Paragraph 10(b), concerned Ameritech Indiana's expenditure of $120 million for improvements to its infrastructure specifically for three categories of its customers: schools, hospitals, and major government centers. This term was agreed to and accepted with the express understanding that the value of the investments would not be subject to recovery through rates and charges.

Eight months before Opportunity Indiana was scheduled to expire, Ameritech Indiana initiated the instant petition, seeking a new alternative regulatory plan, Opportunity Indiana II, to replace Opportunity Indiana. During the course of the Commission's hearings on whether Opportunity Indiana should be continued beyond its scheduled sunset to cover any period before Opportunity Indiana II could take effect, the Commission heard testimony about the extent of Ameritech Indiana's compliance with the terms of Opportunity Indiana over the preceding three years.

At a hearing on September 30, 1997, Ameritech Indiana's witness Norman Cubellis testified that through March, 1997, the Company had spent $14.8 million

toward its Opportunity Indiana Paragraph 10(b) obligations. On redirect, he indicated that through June, 1997 the correct total was $15.6 million. Based on that testimony, this Commission found in its December 30, 1997 Order in this Cause that Ameritech Indiana had failed to meet its Paragraph 10(b) infrastructure investment obligations of $20 million per year.

Pursuant to our directive in the aforementioned December 30th Order, on April 3, 1998 Ameritech Indiana filed its Report to the IURC on Opportunity Indiana Infrastructure Expenditures ("Infrastructure Report"). The report describes the company's expenditure of $17.8 million "for the direct broadband infrastructure to schools, hospitals, and government centers in the form of fiber optics." Infrastructure Report at 1. This time, however, the company also sought to include in its accounting toward its paragraph 10(b) obligation some of its other infrastructure investments it deemed are associated with the aforementioned direct broadband infrastructure.

> "[I]n previous reports, the Company was shortsighted in not disclosing its total Settlement-related network investments. This report sets the record straight in that it reveals not just the limited, narrowly focused broadband investments, but also the digital infrastructure expenditures required to provide the connectivity that makes the network run as customers expect in a ubiquitous fashion."

Infrastructure Report at 9. By its new math Ameritech Indiana attributed an additional $61.6 million to schools, hospitals and major government centers and was on schedule[1] to fulfilling its six-year $120 million infrastructure investment obligation, claiming a total of $79.4 million over the first four years.

In order for the Commission to evaluate Ameritech Indiana's revised claims, by Docket Entry dated June 16, 1998 the presiding administrative law judge ordered it to provide within thirty days supplemental information in nine subject areas. The company filed a public version of its Response on July 16, 1998. Confidential portions of the Response were withheld pending a finding of confidentiality. After publishing notice, the presiding officers held a hearing on October 29, 1998 at which they found the allegedly confidential portions of Ameritech Indiana's Response were in fact confidential and would be treated as such by the Commission. The confidential details were then provided to the Commission.

Having completed its review of Ameritech Indiana's Infrastructure Report and supplemental Response, the Commission now makes the following findings:

---

[1] On page two of the Executive Summary accompanying the Infrastructure Report, Ameritech Indiana indicates that its expenditures exceed "its commitment of $60 million as required by the Settlement Agreement at paragraph 10(b)." The totals show expenditures through 1997, which represents the fourth, rather than the third, year in which Ameritech Indiana was obligated to spend $20 million. Thus, its commitment as required by the Settlement Agreement at paragraph 10(b) as of the end of 1997 was $80 million, not $60 million. The chart on page twelve of the Infrastructure Report notes that Opportunity Indiana did not take effect until six months into the first year, 1994. Mr. Cubellis acknowledged under cross-examination, however, that the terms of Opportunity Indiana explicitly include $20 million beginning in 1994, and that commitment was in no way diminished by fact that Opportunity Indiana became law after January 1, 1994. *See, e.g.*, Transcript at E-103.

Paragraph 10(b) requires the company to spend $20 million annually beginning in 1994 and continuing through 1999 to provide "digital switching and transport facilities . . . to every interested school, hospital and major government center" in its service territory. Significantly, Ameritech Indiana's $120 million total investment pursuant to Settlement Paragraph 10(b) was to be over and above its ordinary infrastructure investment. *See* Opportunity Indiana Order at 10 (citing Ameritech Indiana witness Cubellis for the proposition that "the $20 million annual network investment [Settlement paragraph 10(b)] and the $5 million annual education component [Settlement paragraph 10(a)] are incremental to planned investment.")

No utility's infrastructure is stagnant, and virtually all Indiana utilities, especially large telephone utilities, are continually replacing worn-out or otherwise obsolete components of their networks. In Ameritech Indiana's case, during this Commission's consideration of Opportunity Indiana the company indicated that it planned to spend between $130 and $150 million annually on capital improvements to its infrastructure (not including the $20 million annual investment for schools, hospitals and government centers). *See, e.g.*, testimony of Ameritech Indiana witness Robert D. Jochum in I.U.R.C. Cause No. 39705 at pp. 31-32. And in its Infrastructure Report, the company notes that, including $63 million[2] attributable to paragraph 10(b), it spent between $39 million and $99 million more than was planned over the three years 1995 – 1997. Infrastructure Report at 12 and Attachment C.[3]

Of course, whether or not Ameritech Indiana's *overall* infrastructure investments since Opportunity Indiana took effect fall within or without the amount it was already planning to invest in itself back in 1994 tells us nothing about the extent of its investments in the schools, hospitals and major government centers specifically required by Opportunity Indiana. As Ameritech Indiana acknowledges, not all of its infrastructure investments which have occurred since Opportunity Indiana took effect may be counted toward the specific commitments made in Paragraph 10(b) of the Opportunity Indiana Settlement Agreement and described in our Order in that Cause. We have already observed that the first numbers it supplied under oath showed that the company was clearly delinquent. We now find that its revised numbers do not withstand our scrutiny.

In its Infrastructure Report to the Commission, Ameritech Indiana breaks down its expenditures into four categories: Direct Broadband Investment, Associated Infrastructure Investment, Digital Switching Equipment, and Digital Interoffice Transport. It was apparently its expenditures in only the first category, direct broadband investment, on which Mr. Cubellis based his calculations. Curiously, when describing its direct broadband investments, Ameritech Indiana includes infrastructure investments serving other "content providers" beyond schools, hospitals, and government centers in its Opportunity Indiana totals. *See* Ameritech Indiana's July 16, 1998 Response at 3

[2] $17,780,000 for 1995, $25,464,000 for 1996, and $19,926,000 for 1997. Infrastructure Report at 12.
[3] Actual investment of $549 million compared to the pre-Opportunity Indiana estimate of $450 (3 X 150) to $510 (3 X 170) million.

And what is a content provider? Among the data supplied in response to the presiding administrative law judge's June, 1998 request for more information behind Ameritech Indiana's April, 1998 Infrastructure Report was a breakdown by account of its alleged paragraph 10(b) expenses. Based on the supplemental Response, apparently Ameritech Indiana considers its customers at an amusement park, a racetrack, discount and grocery stores, a hotel, and an automotive plant all somehow qualify to receive benefits promised to schools, hospitals and major government centers. These represent only some of the more readily identifiable accounts listed by Ameritech Indiana as qualifying toward Opportunity Indiana expenditures. Unfortunately, there are many more accounts that provide no clue as to the customers' characteristics. Is "LGX, HDSLII, CLK" a school, a hospital, a major government center, or is it an outlet mall, a car dealership, or a barbershop? We cannot tell, but the inclusion of so many accounts for customers which clearly appear to be outside the three customer categories specified in Opportunity Indiana prevents us from presuming that the large number of unidentifiable accounts represent schools, hospitals, or major government centers. Of the 652 accounts listed, only 254 appeared on their face to fall within the category of schools, hospitals and major government centers. Another 42 could be identified but did not appear to fall within any of the 10(b) categories, while 356, or fifty-four percent of the accounts listed, were not identifiable. Adding only those 254 accounts clearly representing schools, hospitals or major government centers, the direct broadband investment shrinks from $17.8 million to $5.6 million.

While the Commission may at this point give Ameritech Indiana the benefit *of the* doubt with regard to its claimed direct broadband investments, whenever a school, hospital or major government center appears to be receiving some benefit from upgrades to the telephone infrastructure Ameritech Indiana has inappropriately allocated the full cost of such upgrades to its paragraph 10(b) obligations. The information provided to the Commission suggests that in its other three expenditure categories – Associated Infrastructure Investment, Digital Switching Equipment, and Digital Interoffice Transport – Ameritech Indiana is claiming as an Opportunity Indiana infrastructure investment the cost of infrastructure intended for other purposes. For example, a school, hospital or government center might represent less than six percent of the capacity of a particular fiber cable, and yet one hundred percent of the cost of that cable was allocated to the school, hospital or government center for Opportunity Indiana accounting purposes. The company reasons that "[f]iber optic infrastructure to a school, hospital or government center, standing alone, is virtually unusable. Without all the network elements combining digital switching offices and interoffice transport facilities, the school [or hospital or government center] is but an island unto itself and can only use the service for its internal needs." Infrastructure Report at 9. This might be persuasive if Ameritech Indiana weren't already annually upgrading its network to the tune of $139 to $184 million.[4]

[4] Of the three years for which data are listed in Attachment C, the lowest total infrastructure investment, $156.4 million, occurred in 1995. This total included $17.8 million the company claims toward its Paragraph 10(b) commitment. According to the same chart, the highest total occurred the following year, in which the company spent $209.3 million, $25.5 million of which was allocated to Paragraph 10(b).

While we don't necessarily find fault with Ameritech Indiana's decision to install excess capacity in anticipation of other customers' needs, unless that excess capacity is in service of paragraph 10(b) customers the full cost should not be counted toward the company's Opportunity Indiana commitments. The same rationale applies to the allocation of the full cost of the 29 digital switches installed since mid-1994. Indeed, absent clear evidence to the contrary, the only reasonable conclusion for us to reach is that all of its "associated" and other investment categories actually represent part of Ameritech Indiana's planned investment in its overall network. And as previously emphasized, such investments may not be counted toward the Paragraph 10(b) commitments.

Having allowed Ameritech Indiana ample opportunity to provide an accounting of its infrastructure investments in satisfaction of its obligations pursuant to Paragraph 10(b) of the Opportunity Indiana Settlement Agreement, and having found its explanations for claiming more than its direct broadband investments unpersuasive or otherwise lacking, we find its actual 10(b) expenditures to be no more than $17.8 million through the end of 1997, or some $62 million less than promised. Assuming the company also employed the same flawed accounting methodology for its post-1997 infrastructure expenditures, we fear the shortfall to date could be even greater. Accordingly, Ameritech Indiana should spend the balance of the $120 million total Opportunity Indiana infrastructure investment commitment, which balance stood at $102.2 million at the beginning of 1998, and should within one month from the date of this Order file with this Commission its specific plan for doing so. Ameritech Indiana should confer with the other settling parties to devise an expenditure plan, and should include in these discussions the Intelenet Commission. Ameritech Indiana and the other settling parties are also encouraged to consider whether any revisions in the types of infrastructure investment serving schools, hospitals and major government centers are merited, such as the company's suggestion on page four of its Infrastructure Report regarding services other than broadband video. Any proposed revisions should be jointly presented at the same time as the aforementioned expenditure plan.

IT IS, THEREFORE, ORDERED BY THE INDIANA UTILITY REGULATORY COMMISION that:

1.) Ameritech Indiana shall consult the other settling parties in Opportunity Indiana in devising a detailed plan to spend the balance of its infrastructure investments pursuant to Paragraph 10(b) of the Settlement Agreement approved by this Commission in that Cause on June 30, 1994.

2.) Consistent with our above findings, Ameritech Indiana shall file within one month of this Order the expenditure plan referenced in ordering paragraph number one, above.

3.) This Order shall be effective on and after the date of its approval.

McCARTY, KLEIN, RIPLEY, SWANSON-HULL AND ZIEGNER CONCUR:
APPROVED: APR 2 8 1999

I hereby certify that the above is a true and correct copy of the Order as approved.

Kim Brown

Kim Brown
Acting Secretary to the Commission

PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held March 28, 2002

Commissioners Present:

Glen R. Thomas, Chairman
Robert K. Bloom, Vice Chairman, Dissenting Opinion attached
Kim Pizzingrilli
Aaron Wilson, Jr., Dissenting
Terrance J. Fitzpatrick

Re: Verizon Pennsylvania, Inc., Petition and Plan for Alternative Form of Regulation Under Chapter 30 2000 Biennial Update to Network Modernization Plan — P-00930715

ORDER

BY THE COMMISSION:

Before us for review is the 2000 Biennial Update Filing (2000 Update), filed on June 14, 2000, by Verizon Pennsylvania, Inc. (Verizon PA or the Company), to Verizon PA's Network Modernization Plan (NMP). The purpose of this Update is to document Verizon PA's compliance with its obligation to modernize its network to provide universal broadband availability to its customers in accordance with the NMP approved by the Commission in 1995.

I. History of the Proceeding

A. Approval of Verizon PA's Network Modernization Plan

Chapter 30 of the Public Utility Code (Code), 66 Pa. C.S. §§3001-3009, which became law in July 1993, authorizes each local exchange carrier (LEC) to petition this Commission for approval of an alternative form of regulation which, if approved, would

replace traditional rate base/rate-of-return regulation. Chapter 30 also requires each petition for an alternative regulation to be accompanied by a proposed NMP. 66 Pa. C.S. §3003(b).

On October 1, 1993, following the Commission's initial steps to implement the various requirements of Chapter 30, The Bell Telephone Company of Pennsylvania, which subsequently became Bell Atlantic-Pennsylvania, Inc. and is now Verizon Pennsylvania, Inc., filed its Petition for Approval of an Alternative Regulation Plan pursuant to 66 Pa. C.S. §3003. The Petition was organized in three parts: (1) a price stability mechanism for noncompetitive services; (2) a competitive services deregulation proposal; and (3) a NMP. It is this third part, the NMP, that is relevant here.

In its original NMP, Verizon PA stated as part of its commitment the following:

> Bell commits to deploy the technologies necessary to provide universal broadband availability in 2015. In order to meet this commitment, Bell plans to deploy a broadband network using fiber optics or other comparable technology that is capable of supporting services requiring bandwidth of ***at least 45 megabits per second or its equivalent.***

The Bell Telephone Company of Pennsylvania's Petition and Plan for Alternative Form of Regulation Under Chapter 30, Docket No. P-009350715, alternative regulation plan dated October 1, 1993, at 25 (emphasis added) (footnote omitted). While the statutory minimum for universal broadband availability is 1.544 megabits per second (Mbps), 66 Pa. C.S. §3002, Verizon PA voluntarily submitted, in its original NMP, a universal broadband availability commitment that called for a network speed of 45 Mbps or greater.

By Order entered June 28, 1994, the Commission approved, subject to certain modifications, Verizon PA's Petition and Plan for Alternative Form of Regulation and its NMP pursuant to Chapter 30 of the Code. *See Re: Bell Atlantic-Pennsylvania, Inc.*, Dkt

Nos. P-00930715, *et al.*, 82 Pa. P.U.C. 194 (1994); *vacated in part on other grounds, Popowsky v. Pa. PUC*, 669 A.2d 1029 (Pa. Cmwlth. 1995); *Cmwlth Ct order rev'd in part and Comm'n order reinstated in part, Popowsky v. Pa. PUC*, 550 Pa. 449, 706 A.2d 1197 (1997). In its attempt to comply with the modifications imposed by the June 28, 1994 Order, Verizon Pa submitted on July 27, 1994, its Modified NMP.

In its Modified NMP, Verizon PA advised the Commission of its intention to construct a network composed of a hybrid of fiber optic and coaxial cables. In making this commitment, Verizon PA further stated:

> The NMP includes definitions of the service capabilities to be implemented, examples of the services each of them will support, and descriptions of the underlying network technology which Bell plans to deploy, culminating in universal broadband availability throughout Bell's serving area in 2015. The NMP explains Bell's plans to use fiber optic or comparable technology that is capable of bandwidth ***of at least 45 megabits per second***.

Bell Atlantic-Pennsylvania, Inc.'s Alternative Regulation Plan, Dkt. No. P-0099350715, Modified NMP dated July 27, 1994, at 19 (emphasis added). In its Modified NMP, therefore, Verizon PA continued to commit to a network speed of at least 45 Mbps for universal broadband availability.

On September 26, 1994, Verizon PA submitted a supplement to its Modified NMP in response to deficiencies identified by the Commission. In this September 1994 supplement, Verizon PA stated:

> Bell commits to deploy the technologies necessary to provide universal broadband availability in 2015. In order to meet this commitment, Bell plans to deploy a broadband network using fiber optics or other comparable technology that is capable of supporting services requiring bandwidth of ***at least 45 megabits per second or its equivalent.***

Supplement to Modified NMP dated September 26, 1994, at 29 (emphasis added) (footnote omitted). In this first supplement, Verizon PA repeated its commitment to a broadband network speed of 45 Mbps or greater for universal broadband availability.

In rejecting this first supplement to the Modified NMP, we concluded that Verizon PA had not adequately addressed whether the revised plan would accommodate two-way interactive video transmission consistent with the original NMP that was proposed and approved in our June 28, 1994 Order. We directed the Company by Order entered January 23, 1995, to correct the identified deficiencies within 30 days of its receipt of the Order. *Re: Bell Atlantic-Pennsylvania, Inc.*, Dkt Nos. P-00930715, *et al.* 84 Pa. P.U.C. 108 (1995).

On February 22, 1995, Verizon PA filed a "second supplement" to its Modified NMP. This second supplement provided some clarifications and additional information to the earlier filed modified NMP and supplement, but it did not attempt to restate all of the details contained in the earlier documents. The Commission finally approved Verizon PA's Modified NMP after the filing of this second supplement. *Bell Atlantic-Pennsylvania, Inc.'s Petition and Plan for Alternative Form of Regulation Under Chapter 30*, Docket No. P-00930715 (Order entered July 18, 1995).

In this July 18, 1995 Order, the Commission stated that it did not wish to micromanage the engineering details of Verizon PA's network; it wanted instead to monitor the services that the network would provide. *Id.* at 18. With regard to the capability of the network that Verizon PA would provide, the Commission stated:

> Bell's proposal clearly contemplates spectrum allocation for interactive capability, digital signaling, and use of enhanced technology. We fail to see how this proposal is so unreasonable as to necessitate either amendment or rejection under Chapter 30 today.

delineates the standards for approval of biennial plan updates; that Update was subsequently approved by Commission order entered September 16, 1998.[2] The 1996 Update included the continuing commitment to provide broadband service at speeds of 45 Mbps or greater.[3]

On June 3, 1998, Verizon PA filed the Second Biennial Update. Verizon PA's 1998 Update reiterated its commitment to provide bandwidth of 45 Mbps upstream and downstream:

> As defined by Chapter 30, broadband availability refers to customer access to a broadband service within five days from the customer request date. Many customers, due to high speed data needs, currently have requirements for broadband services. By providing spare broadband capacity in the backbone routes from the central office to, or in close proximity to, each distribution area in the subscriber access network, ***BA-PA can provide services at speeds of 45 Mbps or greater to a customer location within five business days, the same criteria used in the last biennial update.***

Re: Biennial Update To Bell Atlantic-Pennsylvania's Network Modernization Plan under Chapter 30 of the Public Utility Code: Second Biennial Update, dated June 3, 1998, at 10 (emphasis added). This filing was subsequently approved by Commission Order entered February 10, 2000.

On June 14, 2000, Verizon PA filed its Third Biennial Update, which is the subject of this Order. Staff met with Verizon PA representatives on July 30, 2001, to review this filing. During the review process, the need for additional information became

[2] We concur that Verizon PA has met the following goals: Integrated Network Signaling (INS) for all of its customers by EOY 1994; 100% Integrated Services Digital Network (ISDN) availability on all access lines by EOY 2000; 100% digital switching by EOY 2000; and conversion of its interoffice network to fiber optic technology by EOY 2000.

[3] In 1996, Verizon PA's proposed Switched Digital Video (SDV) provided each customer a downstream, dedicated channel of 51.84 Mbps and an upstream channel of 1.544 Mbps. The 1996 Update depicted the evolving full service network (FSN) which was to have utilized the SDV platform. In that Update, Verizon PA reconfirmed its prior commitment to provide bandwidth of at least 45 Mbps.

apparent, and formal data requests were subsequently prepared and submitted by Commission staff to Verizon PA. Commission staff submitted 32 Data Requests (DR) to Verizon PA in August and September 2001.

C. The Commission's Adoption of Biennial NMP Reporting Guidelines

Separately, on August 27, 1998, the Commission reopened its proceeding at Docket No. M-00930441, *Re Implementation of Chapter 30 of the Public Utility Code*, to consider adoption of reporting guidelines for use in filing biennial updates. By Order entered May 17, 1999, reporting guidelines were adopted for use by all companies required to file biennial NMP updates pursuant to Chapter 30. These guidelines consist of a list of thirteen (13) requirements that must be addressed by the companies in each biennial NMP update.

II. Discussion

A. Legal Standards

Chapter 30 is clear in its direction to telecommunications providers who wish to petition the Commission for an alternative form of regulation. In order to obtain the benefits of an alternative form of regulation, a LEC must include a NMP that commits to universal broadband availability and capability. 66 Pa. C.S. §3003(b)(1). Chapter 30 also directs a LEC to reasonably balance its deployment of a broadband network between rural, urban and suburban areas within its service territory. 66 Pa. C.S. §3003(b)(2). Further, a LEC is required to file a NMP which identifies and describes in detail the Company's implementation plan for complying with section 3003(b) of Chapter 30. 66 Pa. C.S. §3003(b)(4).

In order for a LEC to comply with Chapter 30's NMP requirements, a LEC must offer a broadband network that is "a communications channel using any technology and having a bandwidth equal to or greater than 1.544 megabits per second." 66 Pa. C.S. §3002. The statute does not make a distinction between upstream and downstream service. Also, Chapter 30 requires that a LEC make available its broadband network universally. Section 3002 defines universal broadband availability as "access to broadband service by each bona fide telephone customer of a local exchange telecommunications company within five days after a request for broadband service is received by any telecommunications company." 66 Pa. C.S. §3002. We also believe that, under Chapter 30, universal broadband availability excludes the notion of broadband services being offered at a level beyond the reasonable economic reach of the majority of a LEC's customers.

Further, Chapter 30 allows the Commission to require that a LEC "provide universal broadband availability having a bandwidth greater than 1.544 megabits per second." 66 Pa. C.S. §3004(c). In essence, Chapter 30 requires a LEC to commit to a NMP, subject to Commission review and approval, that dictates broadband speed, universal availability and balanced deployment; the choice of current and/or future technologies appropriate to attain these overall goals, however, are left largely to the LEC's discretion. In other words, the Commission will not micro-manage the technology or engineering details used to accomplish the overall goals established by the NMP.

Chapter 30 provides for review and approval by the Commission when a LEC files a petition for an alternative form of regulation and NMP. Section 3004 requires the Commission to review the petition and plan after notice and hearing and approve them outright or with modifications. 66 Pa. C.S. §3004(b). Also, the Commission is empowered to deny the petition and plan as not reasonably designed to meet the requirements of Chapter 30. *Id.* Further, the General Assembly directs the Commission to review a LEC's NMP to determine if the plan is consistent with the provisions of this

chapter and is in the public interest. 66 Pa. C.S. §3004(c). As stated previously, section 3004(c) also provides discretion to the Commission to require a LEC to provide universal broadband availability with a bandwidth greater than 1.544 megabits per second. 66 Pa. C.S. §3004(c).

Once a LEC like Verizon PA files a NMP and the plan is approved by the Commission, the LEC is required to file biennial updates with the Commission. 66 Pa. C.S. §3004(b)(6). Again, Chapter 30 is clear in its direction to the Commission to review a LEC's biennial updates. Chapter 30 directs the Commission to "review and approve the plan updates as long as the updates are found to be consistent with and in furtherance of the local exchange telecommunications company's ***currently effective implementation plan***." 66 Pa. C.S. §3004(b)(6)(emphasis added). In accordance with Chapter 30, our role is to review Verizon PA's 2000 Update to make certain that it is furthering the Company's currently effective NMP, including Verizon PA's commitment of 45 Mbps as stated in its approved NMP.

As noted earlier herein, Verizon PA voluntarily committed to a universal broadband availability of 45 Mbps in its originally filed NMP and corresponding supplements in accordance with the provisions of Chapter 30. Based on this commitment by Verizon PA, the Commission concluded in 1995, as part of its approval of Verizon PA's plan for alternative regulation, that the 45 Mbps speed for universal broadband availability was consistent with the provisions of Chapter 30 and is in the public interest. Thus, it is our view that Verizon PA's 1995 NMP with its 45 Mbps commitment for broadband capability is the Company's currently effective implementation plan.

B. Verizon PA's Biennial Updates

1. 1996 and 1998 Updates

In its 1996 and 1998 Updates, Verizon PA described its current technological choices to meet its currently effective NMP, including the commitment of 45 Mbps for broadband service. In these updates, Verizon PA indicated that it was deploying technologies in the residential market which allowed fiber to be closer to each actual residential customer than would the previously proposed Hybrid Fiber Coax (HFC). Both HFC and SDV[4] require the re-wiring of the customer access network. Regardless of the technology chosen by Verizon PA, the commitment of 45 Mbps remained in effect during the years that the Company was providing these updates to this Commission.

Beginning with the 1998 Update, Verizon PA apprised the Commission of several changes in the composition of the technology used to accomplish the broadband commitment goals of the Company. As stated previously, under Chapter 30, Verizon PA is free to make changes to the manner in which it can best achieve the overall goals of the NMP. As set forth earlier in this Order, the broadband commitment as proposed by Verizon PA and approved by the Commission is a bandwidth of 45 Mbps.

The subsequent Verizon PA NMP 2000 Update as discussed below, however, presents a reduced bandwidth capability because of the Company's technological platform choice. This change is contrary to Verizon PA's original commitment to provide bandwidth of at least 45 Mbps deliverable within five days from the customer request date.

[4] SDV, however, was no longer used by Verizon PA subsequent to the 1996 Update and was no longer being pursued in any fashion by the 1998 Update.

The following excerpt is taken from Verizon PA Advanced Data, Tariff F.C.C. No. 1, Section 5.1.1 Service Description, C, which adds a disclaimer, with respect to actual data transmission speeds, that ADSL users can expect:

> The data speeds listed above are maximum speeds. Actual speeds may be lower due to the impact of loop distance, modem technology and other factors. Therefore, performance levels cannot be guaranteed. This includes data speeds, throughput, and packet loss.

Accordingly, it is apparent that even those customers who qualify under the restrictive distance limitations may not ever actually experience service at the advertised speed of 1.5 Mbps.

In the current 2000 Update, the DSL platform is now characterized as xDSL or ADSL.[6] In responses to Commission staff's data requests, Verizon PA indicates that the maximum transmission rate at 12,000 feet is actually less than that stated in its 1998 and 2000 Updates. Moreover, in adopting ADSL technology, Verizon PA is using a technology that it once characterized as inferior to RADSL. In addition, xDSL only produces a speed of 1.544 Mbps downstream speed, contrary to Verizon PA's previous broadband commitments contained in its approved NMP and earlier biennial Updates in 1996 and 1998.

In Verizon PA's 2000 Update, the Company also states that DSL is a broadband service consistent with its NMP. There are several reasons why we believe that Verizon PA's current DSL offering is not a broadband service consistent with its NMP.

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[6] With the 1998 Biennial Update Filing, Verizon PA introduced Rate Adaptive Digital Subscriber Line (RADSL). According to Verizon PA, the initial deployment was limited to loops within 12,000 feet of a Central Office. As Verizon PA stated at the time, "While ADSL (Asynchronous Digital Subscriber Line) technology has been in existence for some time, the capabilities of RADSL are dramatically different." 1998 Biennial Update Filing at 13. In addition, Verizon PA asserted that "RADSL deployment is ATM [Asynchronous Transfer Mode] based and therefore lays the groundwork for the increased deployment of broadband switching functionality. The switching and interoffice architecture of RADSL allows for the immediate offering of high speed data services with an evolutionary path to interactive video." *Id.*

First, DSL, as Verizon PA currently provides it, is too slow to be considered a true broadband service as defined by Verizon PA in its original NMP. The industry generally considers 45 Mbps to be the minimum speed for broadband,[7] and in its NMP, Verizon PA committed to this higher bandwidth level as well. *Bell Atlantic-Pennsylvania, Inc.'s Petition and Plan for Alternative Form of Regulation Under Chapter 30*, Docket No. P-00930715, at 25 (Order entered July 18, 1995).

Second, DSL, as Verizon PA currently provides it, can only reach a speed of 1.5 Mbps,[8] the slowest definition of broadband where the customer is located no further than 12,000 feet from the serving wire center. Only a limited number of Verizon PA's residential customers meet this criteria.

Third, currently Verizon PA's ADSL can achieve 1.5 Mbps in only one direction, the downstream direction. In the upstream direction, it is limited to a maximum of 768 Kbps (0.768 Mbps).

To achieve speeds as fast, or faster, than DSL can currently provide, the wire lines from the serving wire centers to the customers must be replaced with either fiber optic conductors or coaxial cables, or a "hybrid" combination of the two.[9] Based on the 2000 Update, it appears that Verizon PA has dropped all plans to provide modern fiber optic

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[7] 1.544 Mbps is the minimum bandwidth that may be considered "broadband" under Chapter 30, and the statute states explicitly that the Commission may require a greater bandwidth. 66 Pa. C.S. §3004(c). Moreover, Verizon PA committed to broadband capability at a bandwidth of 45 Mbps upstream and downstream in its NMP approved by the Commission. Bandwidth of 45 Mbps or greater is consistent with the definition of "broadband" in *Newton's Telecom Dictionary* (17th Edition, February 2001) ("Broadband. . . . A transmission facility providing bandwidth greater than 45 Mbps (T3). Broadband systems generally are fiber optic in nature. . . .").

[8] *See* www.bellatlantic.com/infospeed.

[9] Currently, the cable television service providers do just that. They run fiber optic cables from the serving wire centers (called "headends") to terminals in the neighborhoods, and from the terminals, coaxial cables run to each customer's home.

cables or coaxial cables to each residential customer thereby causing the Commission to question how Verizon PA will be able to meet its NMP commitment to provide a bandwidth speed of 45 Mbps through its current offering of DSL.

Verizon PA advised the Commission of its intent to use this methodology in its Modified NMP. *Bell Atlantic-Pennsylvania, Inc.'s Alternative Regulation Plan*, Dkt. No. P-0099350715, Modified NMP dated July 27, 1994. It should be noted that the evidence the Company introduced in support of its NMP in 1994 established clearly that modernizing the network meant, among other things, replacing the existing copper distribution system with fiber. The Company's direct testimony asserted that its NMP was consistent with the "moderate infrastructure acceleration scenario" described in the Commission's *Pennsylvania Telecommunications Infrastructure Study* released by DeLoitte and Touche and DRI/McGraw Hill in 1993. (Bell statement 1.0, at 7.) Verizon PA placed the study into evidence in its rebuttal testimony. (Bell statement 9.0.) The study makes clear that one of the assumptions underlying all of the acceleration scenarios was deployment of a fiber distribution system. (Vol. I, at 1-96; Vol. IV, at XII-1-XII-19.) In fact, the study indicated that of all the technology changes needed for a broadband capable network, deployment of fiber in the feeder and distribution systems was the change that would lag behind the others if the Commonwealth did not adopt a strategy to accelerate deployment. (Vol. IV, at XII-25, XII-27.) The study described the copper distribution system as "the most bandwidth-limited section of the network." (Vol. IV, at IX-18.) Finally, it described ADSL technology as a "potential interim solution" to allow higher bandwidth services pending construction of a fiber distribution system. (*Id.*)

It is apparent that DSL, as it currently exists today, is unable to provide the broadband availability of 45 Mbps both upstream and downstream that the Company voluntarily committed to and the Commission approved in 1995. Rather, Verizon PA's 2000 Update states that it satisfies this commitment by providing what it calls "broadband service" at a downstream speed of 1.544 Mbps and with an upstream speed

of less than that. It is our view, however, that Verizon PA's 2000 Update claiming that it is only obligated to provide capability at speeds of 1.544 Mbps downstream (and even slower speeds upstream) is plainly inconsistent with its original commitment to provide broadband capability at speeds of 45 Mbps or more. We believe that Verizon PA has unilaterally changed its broadband commitment without properly notifying this Commission that it seeks a change to this fundamental aspect of its 1995 NMP.

In addition, we are concerned that the 2000 Update does not demonstrate that broadband service of 45 Mbps is being universally deployed in a balanced manner in accordance with Chapter 30's requirements.[10] First, Verizon PA has committed to making 20% of its access lines in each of rural, suburban, and urban rate centers broadband capable within five days from the customer request date by EOY 1998; 50% by 2004; and 100% by 2015. Verizon PA reported that it had achieved the following results: 31% Rural, 57% Suburban, and 78% Urban as of the 2000 Update. In response to a Commission data request, Verizon PA updated the results as of June 30, 2001: 33% Rural, 56% Suburban, and 61% Urban based on the 12,000 foot distance limitation for DSL at 1.5 Mbps.

We note that Verizon PA states it has met the composite commitment of 50% by 2004 for urban and suburban customers based on DSL deployment as the technology currently exists. However, it has not been convincingly demonstrated that Verizon PA will be able to meet its commitment that 50% of rural customers will experience broadband availability by 2004 using the current DSL technology. Also, when "customers" are divided into business customers and residential customers, the data suggests that residential broadband availability lags significantly behind that for business

[10] We further note that Verizon PA in its original petition for alternative regulation agreed to deploy universal broadband in accordance with the provisions of Chapter 30. However, we can find no mention in Chapter 30 which indicates that Verizon PA must first be guaranteed a revenue stream before deploying true broadband infrastructure or that broadband should only be deployed in areas where it costs the least to do so.

customers to the extent that the overall commitments are not being met for either suburban or rural residential customers.[11]

Also, there is the issue of deployment schedules. Verizon PA is obligated under Chapter 30 to provide broadband service to 100% of the residential customers in its territory by the year 2015. The Commission concludes that, based on the information provided by Verizon PA in support of its 2000 Update, a significant number of Pennsylvania customers will not have DSL, a narrowband service as presently offered by Verizon PA, available before 2015. The Commission is concerned that Verizon PA has no statutorily mandated broadband service available now, or plans for it in the future, for residential customers.

Since DSL has never been tariffed in Pennsylvania, the Commission has not been able to obtain a roll-out schedule from Verizon PA on this service. We note that Verizon PA is relying on DSL service to meet its Chapter 30 obligation for residential customers although it does not come under the purview of this Commission. Lacking any commitment to provide DSL to all customers in its serving area, Verizon PA has only provided DSL to those customers who live within 12,000 to 18,000 feet of a serving wire center (DSL at less than 1.544 Mbps is capable of distances up to 18,000 feet) where Verizon PA chooses to offer the service. Again, the offering of DSL service with its distance limitations does not provide both upstream and downstream speeds in compliance with Verizon PA's previously approved broadband commitments.

[11] However, Verizon PA has committed to make fiber optic access available in the right-of-way of public schools, health care facilities, and industrial parks by EOY 2000. In the 2000 Update, Verizon PA defined fiber optic access as being where the serving pole, pedestal, or manhole has a fiber termination. Verizon PA reported that 86% of the public schools, 89% of the health care facilities, and 96% of the industrial parks had fiber optic access at EOY 1999. Verizon PA expected to meet its EOY 2000 commitment of providing broadband facilities for all public schools, health care facilities, and industrial parks. In response to a Commission data request, Verizon PA updated the results to show that its broadband facilities were available in the right-of-way for 100% of public schools, health care facilities, and industrial parks by June 30, 2001. Thus, Verizon PA's commitment for this objective has been met.

Moreover, there is no indication in Verizon PA's 2000 Update or its subsequent responses to staff's data requests that this will change in the near future. Based on its responses to the Commission staff's data requests, Verizon PA believes that it is under no obligation to provide DSL universally.[12] We noted previously that a DSLAM can be installed into the Remote Terminals to solve the distance limitations and thus ensure that the majority of Verizon PA's customers would have DSL available to them. However, Verizon PA does not currently have any DSLAM equipment located at the Remote Terminals. *In the Matter of Collaborative Report of the Pennsylvania Public Utility Commission Regarding Industry Standards for CLEC Access to DSLAM Equipment Located at Verizon Pennsylvania Inc.'s Remote Terminals*, Dkt. No. M-00001353, Appendix, Executive Overview (Order entered April 10, 2002).

Accordingly, we will direct Verizon PA for its 2004 NMP Biennial Update to increase the availability of DSL service to its suburban and rural residential and small business customers. This will be based on Verizon PA's previously approved commitment levels (unless the Company petitions to modify these same commitments and the modifications are approved) such that the deficiency (when measured against the year 2004 aggregate commitment level of 50%) is reduced by at least one-half. For example, if the current suburban residential and rural residential deployment level were 20% for each, the 2004 requirement would be at least 35% for each subcategory, i.e., a 15% increase ([50%-20%]/2). For its 2002 NMP Update we will direct Verizon PA to demonstrate the progress it is making toward these goals.

[12] Likewise, Verizon PA has provided no information that would indicate that broadband service or DSL is any less desirable among suburban or rural customers than it is among urban customers. In fact, a recently released study by the U.S. Department of Commerce indicates that internet usage in rural households nationwide from 1998 to 2001 is comparable to that in urban areas. In rural areas, 52.9% of individuals use the Internet, compared with 49.1% in areas classified as central city and 57.4% in areas classified as urban. *A Nation Online: How Americans Are Expanding Their Use of the Internet*, United States Department of Commerce, February 2002.

This requirement is in no way to be construed as acceptance by this Commission of DSL as a broadband service to satisfy the previously approved broadband commitments in Verizon PA's NMP. Rather, the reference to these commitment levels for DSL represents a basis for meaningful deployment of DSL to those customers where DSL service is currently under-deployed. Without these directives, we are concerned that a significant number of suburban residential and rural residential customers will not have even the current, inadequate version of DSL service available to them before 2015.

Those customers having the capability and willingness to pay for DSL service face the reality that less than half of Verizon PA's residential customers have DSL available to them via Verizon PA due to its distance limitations from the Central Offices. Even fewer residential customers have DSL available to them at speeds of 1.5 Mbps or above. Nevertheless, the 1.5 Mbps bandwidth for those customers is still far below the 45 Mbps bandwidth in the currently effective NMP.

Accordingly, the Commission concludes that, based on the information provided in its 2000 Update, Verizon PA is not meeting the fundamental features of its NMP as to bandwidth (upstream and downstream), universal availability and equal deployment. Rather, we believe that Verizon PA has unilaterally changed its broadband commitment, which directly impacts the universal broadband availability envisioned by Chapter 30. Verizon PA is not permitted to unilaterally reduce the central feature of its broadband commitment without first seeking an amendment or filing a supplement to its NMP

before the Commission.[13] Moreover, while the statutory minimum for broadband is 1.544 Mbps, Verizon PA voluntarily submitted and the Commission subsequently approved, a NMP and broadband commitment that called for a network speed of 45 Mbps or greater.

Verizon PA has always had the opportunity to request an amendment or to file a supplement to its Chapter 30 Plan, including the NMP portion of that Plan, to address any

[13] In *Bell Atlantic-Pennsylvania, Inc. v. Pa.PUC*, 763 A.2d 440 (Pa. Cmwlth. 2000), the Commonwealth Court addressed the statutory obligations of the Commission and Verizon PA when modifications to the Company's Chapter 30 Plan are necessary. The Commonwealth Court noted that Verizon PA's plan since 1994 has been modified pursuant to Verizon PA's request and the Commission's regulatory power and held as follows:

> Thus a complete view of the interrelated pattern of Chapter 30 makes clear that the subject matter of a plan approved under Section 3004 is not fixed and unchangeable for the life of the plan but remains subject to an alternative form of regulation pursuant to which the PUC may, after notice and hearing, make changes with respect to the noncompetitive matters in the plan. . . Chapter 30 affects, but does not repeal the PUC's powers under the Public Utility Code to amend its previous orders, 66 Pa. C.S. §703(c), 703(g), pursuant to notice and hearing.

Id. at 474. The Court also held that:

> Nothing in Chapter 30 gives Bell's Plan the status of a contract amendable by the PUC only to the extent requested by Bell. The Plan can be revised by the PUC pursuant to a request by Bell, but the law is clear that the PUC can issue a decision that has the effect of modifying the Plan if the law and facts warrant such action . . .Thus, this Court's understanding is that adoption of a plan clearly does not freeze a utility's status into immobility for ten years. No carrier wants to be muzzled from requesting a change in status warranted by changing circumstances. If circumstances change, such as new impacts from technological advances or economic tides, or the emergence of a new breed of competitors resulting in threatened losses from existing tariff rates or present competition rules, we do not expect that Bell, or any carrier with a Chapter 30 Plan, would maintain the position that the Plan makes existing measures unchangeable. To claim that the Commonwealth regulatory body, the PUC, could not touch any of these measures without Bell's consent is equally unthinkable.

Id. at 475-76.

changes to its overall NMP commitment.[14] The Commission can then review Verizon PA's request with notice and an opportunity to be heard, and approve, modify or reject the Company's request in accordance with Chapter 30. Unilateral amendments to the currently effective NMP by means of a biennial update, however, are not acceptable and are not permitted under the statute.

C. The Commission's Thirteen NMP Guidelines

The 2000 Update is in compliance with most of the Commission's NMP reporting guidelines. However, in our view, Verizon PA is not in compliance with Guideline Nos. 1 and 2 relating to the number of customers actually buying broadband services and the type of broadband service they are actually buying. The Commission has determined previously that the information is important as stated at page 3 of our September 22, 1998 Order at M-00930441, "the true measure of any local exchange carrier's compliance with its Network Modernization Plan is the provision of actual 'broadband' services to customers." In addition, our May 17, 1999 Order found that "[a] network modernization plan offering broadband services with few, if any, subscribers may not benefit Pennsylvania or its citizens as we move into the 21st Century." May 17, 1999 Order at 15.

[14] We note that on other occasions, Verizon Pa has requested modifications to its Chapter 30 Plan approved in 1995 by the Commission. Verizon PA requested a modification to its approved Chapter 30 Plan in 1995 by petitioning the Commission under section 703(g) of the Public Utility Code to request revenue neutral adjustments of all noncompetitive services notwithstanding the "freeze" on protected service rates until December 31, 1999. *Re: Bell Atlantic-Pennsylvania, Inc.'s Petition and Plan for Alternative form of Regulation Under Chapter 30,* Docket No. P-00930715, at 2 (Order entered October 30, 1995). The Commission granted Bell's petition. *Id.* at 22. In addition, in 1997, Verizon PA requested that the Commission declare both its intraLATA toll services and its business services competitive. In the Global Order, the Commission designated these services competitive with certain conditions. *Joint Petition of Nextlink, Inc., et al. for Adoption of Partial Settlement Resolving Pending Telecommunications Issues and Joint Petition of Bell Atlantic Pennsylvania, Inc., et al. for Resolution of Global Telecommunications Proceedings*, Docket Nos. P-00991648 and P-00991649, at 238-49 (Order entered September 30, 1999).

Verizon PA has failed to provide this customer information in spite of the fact that the guidelines have been in effect since May 17, 1999, as well as having been directed to be in compliance by our February 10, 2000 Order. However, in its cover letter of December 3, 2001, Verizon PA stated that "[w]e are, however, taking steps to ensure that customer information will be available for the June 2002 Network Modernization Plan report."

We continue to believe that this information is important and should be provided. Accordingly, we direct Verizon PA to provide the specific customer information required in Guideline Nos. 1 and 2 under the "Chapter 30 Biennial Update Reporting Guidelines for Local Exchange Carriers" in its next Biennial Update Filing which is due in June, 2002 and to provide the same in subsequent Biennial Update Filings as it has committed to in its letter of December 3, 2001.

In addition, in order to facilitate our review we hereby direct Verizon PA to restate the Guidelines Nos. 1-12 (Number 13 is a statement regarding the treatment of proprietary information), and explain in detail how Verizon PA has met each guideline in each of its subsequent Biennial Update Filings.

This Commission has a clear, unambiguous duty to enforce its orders. 66 Pa. C.S. §501(a). Public utilities have a clear, unambiguous duty to comply with the Commission's orders. 66 Pa. C.S. §501(c). As previously noted, broadband is defined as "a communications channel using any technology and having a bandwidth equal to ***or greater*** than 1.544 Mbps." 66 Pa. C.S. §3002 (emphasis added). In 1995, Verizon PA voluntarily offered and the Commission accepted, by order and in conjunction with the Company's request for alternative regulation, a NMP and commitment to achieve universal broadband availability with a bandwidth of 45 Mbps.

If Verizon PA elects to deploy different technology that alters fundamental features of the NMP previously proposed and subsequently approved by Commission order, it is incumbent upon Verizon PA to file a petition for amendment or modification of its NMP. Verizon PA may not simply unilaterally announce a reduced bandwidth in its biennial update. Accordingly, this Commission has a legal obligation to reject Verizon PA's 2000 Update and require it to submit a new update specifying its plans to satisfy its legal obligation to provide a modernized network with broadband capability of at least 45 Mbps upstream and downstream, to be available within five days from the customer request date; **THEREFORE,**

IT IS ORDERED :

1. That Verizon Pennsylvania, Inc.'s 2000 Biennial Update Filing filed on June 14, 2000, be rejected.

2. That Verizon Pennsylvania, Inc. submit, within 45 days of the entered date of this Order, a revised Update setting forth its plan to comply with its legal obligation to provide broadband capability of at least 45 Mbps upstream and downstream, consistent with its previously approved NMP.

3. That Verizon Pennsylvania, Inc. increase the availability of DSL service to its rural and suburban residential and small business customers, such that the current deficiency (when measured against the year 2004 level of aggregate broadband availability commitment) is reduced by at least one-half as detailed herein.

4. That for its 2002 NMP Update, Verizon Pennsylvania, Inc. demonstrate the progress it is making toward the goals identified in Ordering Paragraph No. 3, above.

5. That Verizon Pennsylvania, Inc. provide plans and objectives to deploy broadband capability of at least 45 Mbps upstream and downstream to the customer's premises and, in the interim, expanded DSL deployment at speeds of at least 1.544 Mbps. The plans and objectives for residential customers shall be shown separately from business customers. Residential customers and business customers shall be further broken down into urban, suburban, and rural customers subcategories. The date objective that each subcategory is deployed to the level of 5%, 10%, 25%, 50%, 75%, 100% shall be reported. This information shall be in a format similar to Verizon Pennsylvania, Inc.'s answer to the Commission's Data Request 1.

6. That Verizon Pennsylvania, Inc. provide the specific customer information required in Guideline Nos. 1 and 2 under the "Chapter 30 Biennial Update Reporting Guidelines for Local Exchange Carriers" in its next Biennial Update Filing which is due in June 2002, and to provide the same in subsequent Biennial Update Filings as it has committed to in its letter of December 3, 2001 to the Commission.

7. That Verizon Pennsylvania, Inc. restate the Guidelines Nos. 1-12 and explain in detail how it has met each guideline in each of its NMP Biennial Updates filed subsequent to the entry date of this Order.

BY THE COMMISSION,

James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: March 28, 2002

ORDER ENTERED: May 15, 2002

PENNSYLVANIA PUBLIC UTILITY COMMISSION
HARRISBURG, PENNSYLVANIA 17105-3265

VERIZON PENNSYLVANIA, INC. CHAPTER 30 NETWORK MODERNIZATION PLAN 2000 BIENNIAL UPDATE

PUBLIC MEETING
MARCH 28, 2002
MAR-2002-FUS-0429*
DOCKET NO. P-00930715

DISSENT OF VICE CHAIRMAN ROBERT K. BLOOM

I respectfully disagree with the Majority's decision to reject the 2000 Biennial Filing of Verizon Pennsylvania, Inc. ("Verizon"). This is the third Filing by Verizon to document its compliance with the obligation to modernize the network in compliance with Chapter 30. That obligation required Verizon to provide universal broadband availability to its customers in accordance with the Network Modernization Plan ("NMP") approved by the Commission in 1995. *Bell Atlantic-Pa., Inc.'s Petition and Plan for Alternative Form Regulation under Chapter 30*, Docket No. P-00930715, entered July 18, 1995. The Majority has *sua sponte* revised Verizon's commitment.

The Majority's decision incorrectly concludes, contrary to the Commission's prior determinations, that Verizon's initial commitment was to provide 45 megabits per second ("mbps"). The approved NMP was to deploy "universal broadband availability" by 2015 consistent with the provisions of Chapter 30 which defines bandwidth of 1.544 mbps using any technology.

The NMP that the Commission approved for Verizon specifically distinguished between "commitments" and "plans".

Verizon's NMP has always described its commitment as limited to the statutory definition of broadband (1.544 mbps) and expressly reserved the right to modify its deployment plans as technology–and the market--advanced. The approved NMP clearly draws the distinction between Verizon's "commitment" to universal broadband availability as required under Chapter 30 and the "plan" to use certain kinds of technology (such as the 1994 plan to use a hybrid fiber coaxial cable architecture which would sustain services using 45 mbps).

The Majority erroneously mischaracterizes Verizon's statements of its "then current plans" as being the equivalent of a "commitment". However, the plain words of the NMP do not support that interpretation. While the NMP stated that the company planned, based upon market expectations and prevailing technology, to use a higher capacity, the NMP specifically reserved – in the approved NMP itself – the option to modify these implementation plans through modifications to the NMP biennial filings.

However, a review of the 1996 and 1998 Biennial Filings clearly shows that the Commission understood this distinction and understood that Verizon's commitment was to "universal broadband deployment" as defined by Chapter 30, (i.e., 1.544 mbps, not 45 mbps). The Majority ignores the fact that the Commission approved Verizon's 1998 Biennial Filing in which Verizon expressly stated that it intended to deploy Digital Subscriber Line ("DSL") -- at a maximum of 7 mbps -- to meet its broadband deployment commitment. The Commission may approve an NMP biennial filing *only* if the filing is "consistent with and in furtherance of the local exchange company's currently effective" network modernization plan. 66 Pa C S A 3003(b)(6). If Verizon's commitment was to deploy 45 mbps, the Commission could not have approved the 1998 Biennial Filing. Obviously by approving the 1998 Biennial Filing, the Commission was

affirming that Verizon's commitment was to universal broadband deployment -- at the level required by Chapter 30. As with any other utility, Verizon reasonably relied on the Commission's action when the 1998 Biennial Filing was approved. Verizon continued to invest in DSL and other technologies in furtherance of its Chapter 30 obligations. The Majority has lost sight of the approved NMP and now seeks to extend it well beyond its original intent and word.

Further, the Majority is wrong to imply that DSL is not broadband service. That decision is inconsistent with Chapter 30 and Commission precedent in cases involving Verizon and other ILEC Chapter 30 Plans. DSL is capable of providing broadband service at speeds up to 7.1 mbps thereby meeting the statutory broadband definition. Verizon's updated deployment figures for DSL includes only lines capable of getting DSL at 1.544 mbps. Approximately 51% of Verizon's lines have DSL available at 1.544 mbps or greater. It is also incorrect for the Majority to state that some customers far from the wire center cannot get DSL at 1.544 mbps. Only those lines that can get DSL at 1.544 mbps or greater are included in Verizon's data to support its compliance. Furthermore, this Commission has recognized that DSL is broadband compliant in approving many other Chapter 30 Plans, including Alltel and United. The Commission most recently approved Verizon North's plans to meet broadband commitment through DSL service. The DSL provided for, in these approved Plans, is exactly the same as that being deployed by Verizon. How can DSL be broadband for one local exchange company but not for others?

The main basis for the Majority's decision to now reject DSL as broadband compliant under Chapter 30 is that it does not provide 1.544 mbps in both directions. Verizon's DSL service, like cable modem service and the ILEC services have higher download than upload speeds. Further, Commission precedent has already rejected this argument in Alltel's Chapter 30 proceeding. In Alltel's Chapter 30 proceeding, the Commission rejected AT&T's argument that Alltel's DSL did not comply with Chapter 30 because of its one way direction, stating "[W]e have not defined interactive as having equal speeds in both directions, especially in light of the fact that, typically, downstream is at a faster speed than upstream." *Petition Of Alltel Pennsylvania, Inc. For Approval Of An Alternative Form Of Regulation And Network Modernization Plan*, Docket No. P-00981423, entered January 20, 2000 at 125. Our *Global Order*[1] glowingly refers to DSL as a technological development that "hold[s] the promise of adapting existing loop facilities to broadband capability less expensively than anticipated in 1993..."(p. 107) and describes it as a service "capable of delivering high speed data transmission of up to 7 [mbps] by employing the same copper loop ordinarily used for local telephone service." (p. 111)

The Majority states other, equally incorrect, reasons why DSL is not broadband. The industry does NOT "generally consider" 45 mbps to be the minimum speed for broadband. For example, the Federal Communications Commission defines "broadband" as speeds over 200 kbps in "at least one direction". *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket No. 02-33, FCC Notice of Proposed Rulemaking released February 15, 2002. The Tauzin/Dingell Bill (H.R. 1542), now pending in Congress, defines "High Speed Data Service" as not less than 384 kbps in at least one direction. Chapter 30 defines broadband as a speed of 1.544 mbps.

It is also incorrect for the Majority to state that some customers far from the wire center can not get DSL at 1.544 mbps. Since Verizon is only counting those customers who can get DSL at

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[1] *Joint Petition of Nextlink, Inc., et al. for Adoption of Partial Settlement Resolving Pending Telecommunications Issues and Joint Petition of Bell Atlantic Pennsylvania, Inc., et al. for Resolution of Global Telecommunications Proceedings, Docket Nos P-00991648 and P-00994619, entered September 30, 1999.*

DATE **ROBERT K. BLOOM, VICE CHAIRMAN**